

# L-force

*Geared motors MF*



Compact, efficient, dynamic

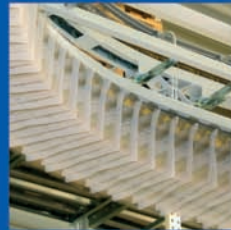
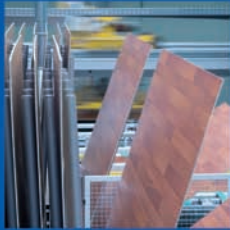
**NEW**

Optimised for  
inverter operation

**Lenze**

**This is what we stand for.**

You want to implement your machine and plant concepts efficiently and easily or optimise existing concepts to reduce costs? Then, Lenze is the partner you are looking for. For more than 60 years, drive and automation systems have been our core competence.



Drive and automation technology from Lenze keep things moving – for example in the areas of materials handling, robotics and component handling as well as in packaging facilities for the intralogistics and automotive sectors and the food and beverage industries.

# Lenze | about us

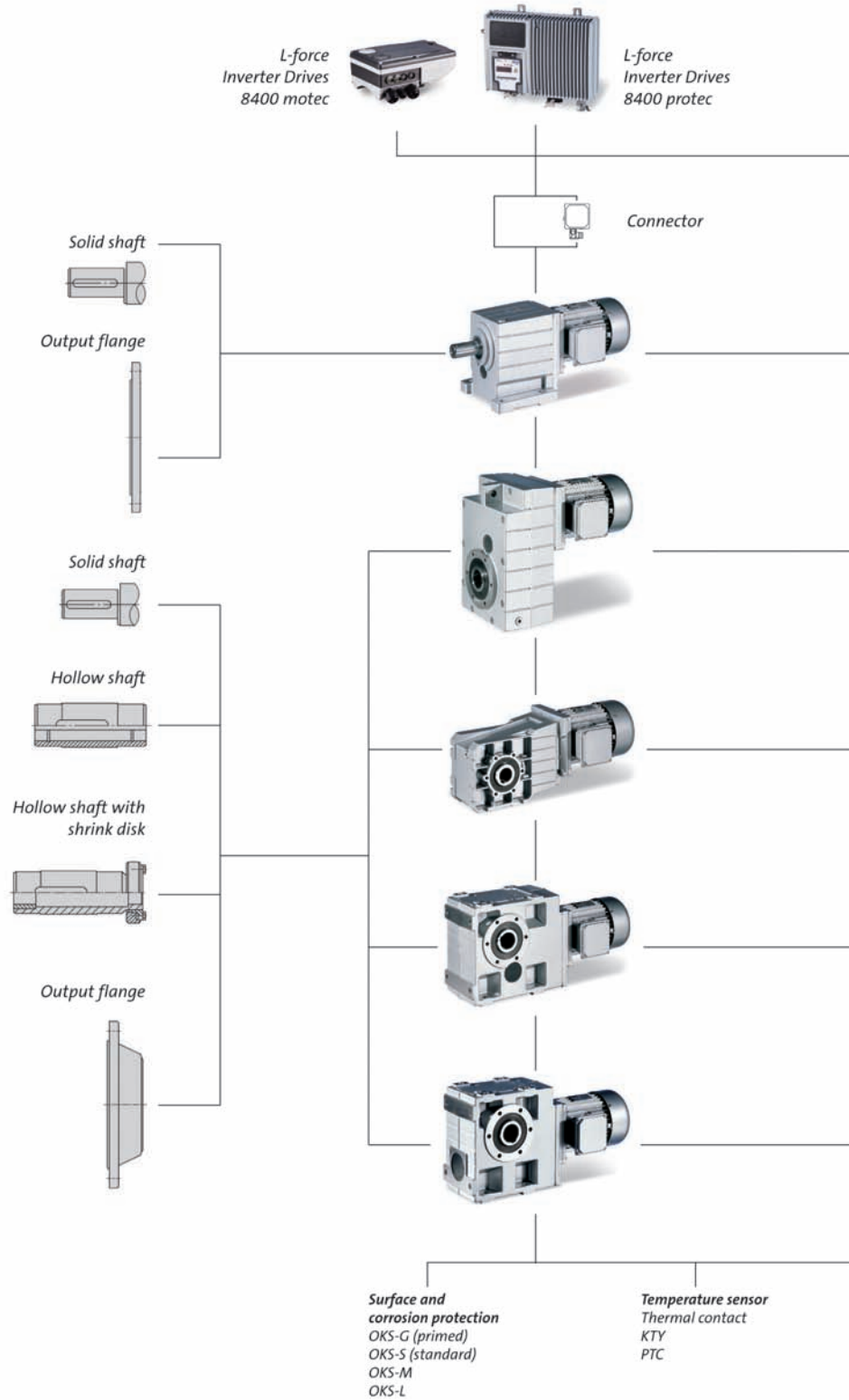
We can offer you automation solutions including control, visualisation and drive technology from a single source. Our drive systems will improve the performance of your machines. From project planning to commissioning, we have the know-how, whilst our international sales and service network can provide you with expert help and advice at any time.

Cut your process costs and increase your ability to compete. Let us analyse your drive technology tasks and support you with made-to-measure solutions. We can take an integrated approach to projects thanks to the scalability of our products and the scope of the overall portfolio. We can get the best from your machines and systems.



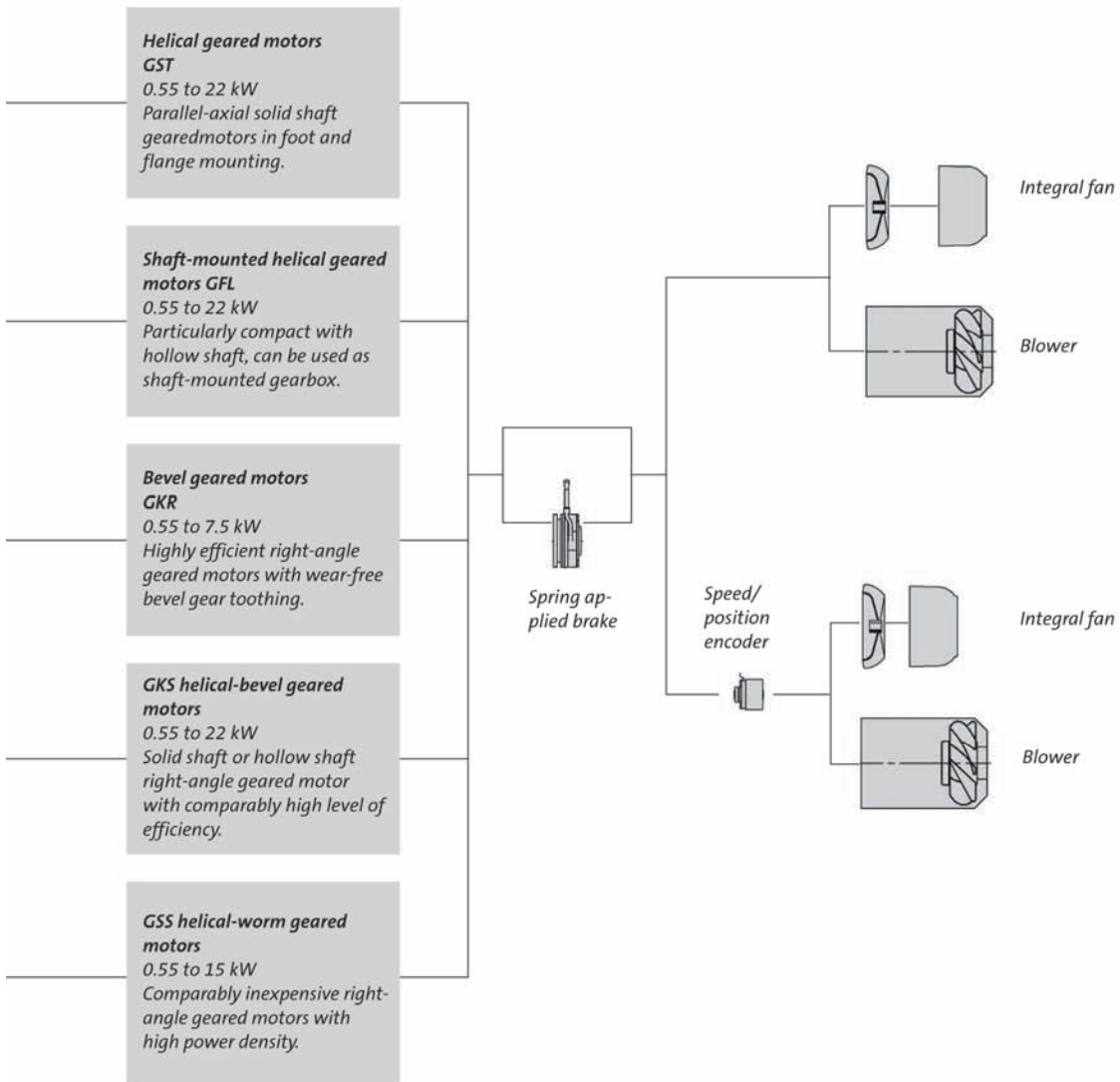
At your side all over the world – with thorough and professional support from our motivated team.

# System overview | Geared motors MF





L-force  
Inverter Drives 8400



Approvals  
CE  
UL  
GOST  
UkrSepru

# L-force | Your future is our drive

Demands are increasing all the time. In future, key challenges will lie in the areas of cost efficiency, time-saving and quality improvements. Faster project planning and commissioning, improved performance and increased flexibility in production are expected. New ideas are therefore needed for the machines of the future.

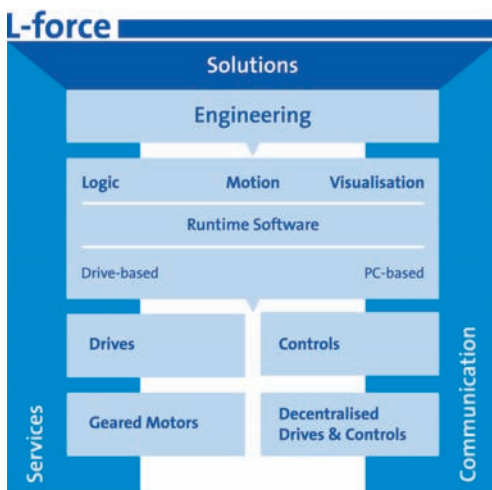
Lenze has risen to this challenge and, with L-force, we can now not only offer you an innovative family of drive and automation products, but also a new, comprehensive portfolio of solutions.

## **Driven by innovation – new ideas that open up new opportunities**

Always on the lookout. Our idea of innovation is striving for better solutions for our customers every single day.

## **Driven by flexibility – High degree of scalability for individual solutions**

Scalability is an important aspect of the L-force philosophy. Performance, scope of functions, software, service provisions and aftersales care – Lenze will provide you with exactly the combination you require.



## **Driven by usability – Simple solutions, even for complex applications**

We always focus on the user. Therefore, when we developed L-force, we made sure that people with sufficient practical experience were involved, right from the start.

## **Driven by compatibility – Universal products and solutions**

There is no need to waste time looking for suitable components and the right interfaces. With L-force, every element is perfectly matched.

## **Our drive is "rightsized" – the perfect solution for your application**

We call it Rightsizing: Optimise your processes with Lenze geared motors and increase your added value.

# Overview | Geared motors MF

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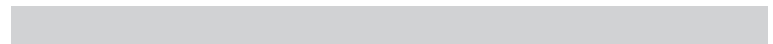
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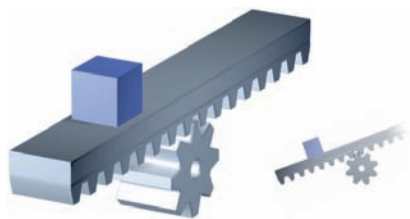


# Contents | Geared motors MF



## General information

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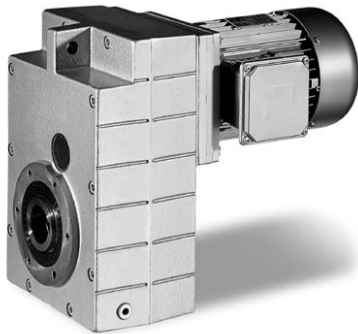




## GST Helical geared motor

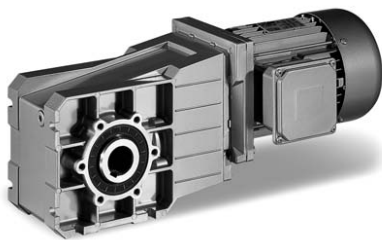
|   |     |
|---|-----|
| GST [N] - forces  |     |
| Permissible radial and axial forces at output                 | 53  |
| GST [ ' ] - backlash  |     |
| Output backlash in angular minutes                            | 57  |
| GST [kgcm <sup>2</sup> ] - moments of inertia                 |     |
| GST□□-1   | 59  |
| GST□□-2   | 60  |
| GST□□-3   | 64  |
| GST [ ⊗ ] - ventilation                                       |     |
| Position of ventilation, sealing elements and oil level check | 66  |
| Compensation reservoir for mounting position C                | 69  |
| GST [kg] - Weights  |     |
| MF□MA   | 70  |
| GST [Nm] - selection tables                                   |     |
| MF□MA   | 77  |
| GST [mm] - dimensions   |     |
| MF□MA   | 112 |
| GST & [mm] - Additional dimensions                            |     |
| GST□□-2/3M VAR  | 130 |
| GST□□-2/3M VAL  | 131 |

## GFL Shaft-mounted helical geared motors



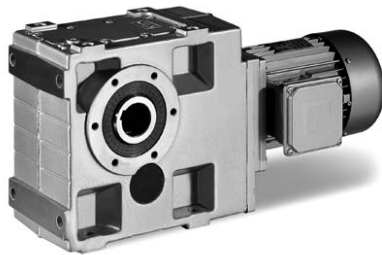
|   |     |
|---|-----|
| GFL [N] - forces  |     |
| Permissible radial and axial forces at output                               | 133 |
| GFL [ ' ] - backlash  |     |
| Output backlash in angular minutes  | 137 |
| GFL [kgcm <sup>2</sup> ] - moments of inertia                               |     |
| GFL□□-2   | 138 |
| GFL□□-3   | 141 |
| GFL [ ⊗ ] - ventilation   |     |
| Position of ventilation, sealing elements and oil level check               | 143 |
| Compensation reservoir for mounting position C                              | 145 |
| GFL [kg] - weights  |     |
| MF□MA   | 146 |
| GFL [Nm] - selection tables   |     |
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## Bevel geared motor GKR



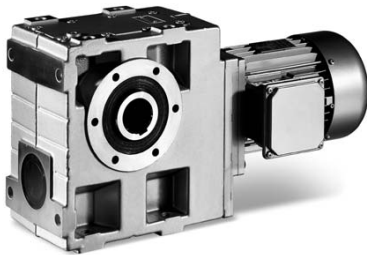
|   |     |
|---|-----|
| GKR [N] - forces  |     |
| Permissible radial and axial forces at output                               | 211 |
| GKR [ ' ] - backlash  |     |
| Output backlash in angular minutes  | 214 |
| GKR [kgcm <sup>2</sup> ] - moments of inertia                               |     |
| GKR□□-2   | 215 |
| GKR [ ⊗ ] - ventilation   |     |
| Position of ventilation, sealing elements and oil level check               | 216 |
| GKR [kg] - weights  |     |
| MF□MA   | 217 |
| GKR [Nm] - selection tables   |     |
| MF□MA   | 220 |
| GKR [mm] - dimensions   |     |
| MF□MA   | 230 |
| GKR & [mm] - Additional dimensions  |     |
| Hollow shaft with shrink disc   | 238 |
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| Gearbox with 2nd output shaft end   | 239 |
| Rubber buffer for torque plate  | 240 |
| Torque plate on threaded pitch circle                                       | 241 |
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| Mounting set for hollow shaft circlip - Proposed design for auxiliary tools | 244 |

## GKS Helical-bevel geared motor



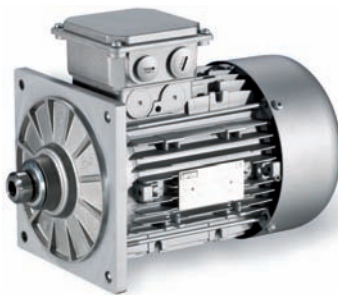
|   |     |
|---|-----|
| GKS [N] - forces  |     |
| Permissible radial and axial forces at output                               | 245 |
| GKS [ ' ] - backlash  |     |
| Output backlash in angular minutes  | 249 |
| GKS [kgcm <sup>2</sup> ] - moments of inertia                               |     |
| GKS□□-3   | 250 |
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| GKS [ ⊗ ] - ventilation   |     |
| Position of ventilation, sealing elements and oil level check               | 257 |
| Compensation reservoir for mounting position C                              | 259 |
| GKS [kg] - weights  |     |
| MF□MA   | 260 |
| GKS [Nm] - selection tables   |     |
| MF□MA   | 267 |
| GKS [mm] - dimensions   |     |
| MF□MA   | 292 |
| GKS & [mm] - Additional dimensions  |     |
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| Torque plate at housing foot  | 312 |
| Mounting set for hollow shaft circlip - Proposed design for auxiliary tools | 313 |

## GSS Helical-worm geared motors



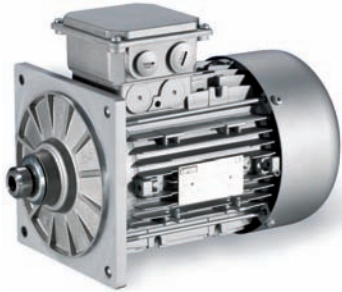
|   |     |
|---|-----|
| GSS [N] - forces  |     |
| Permissible radial and axial forces at output                               | 315 |
| GSS [kgcm <sup>2</sup> ] - moments of inertia                               |     |
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| GSS [ ⊗ ] - ventilation   |     |
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| GSS [kg] - weights  |     |
| MF□MA   | 332 |
| GSS [Nm] - selection tables   |     |
| MF□MA   | 338 |
| GSS [mm] - dimensions   |     |
| MF□MA   | 356 |
| GSS & [mm] - Additional dimensions  |     |
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## Three-phase AC motors

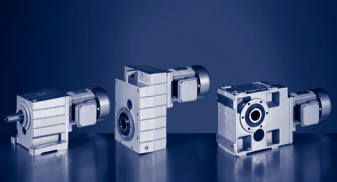


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## Three-phase AC motors



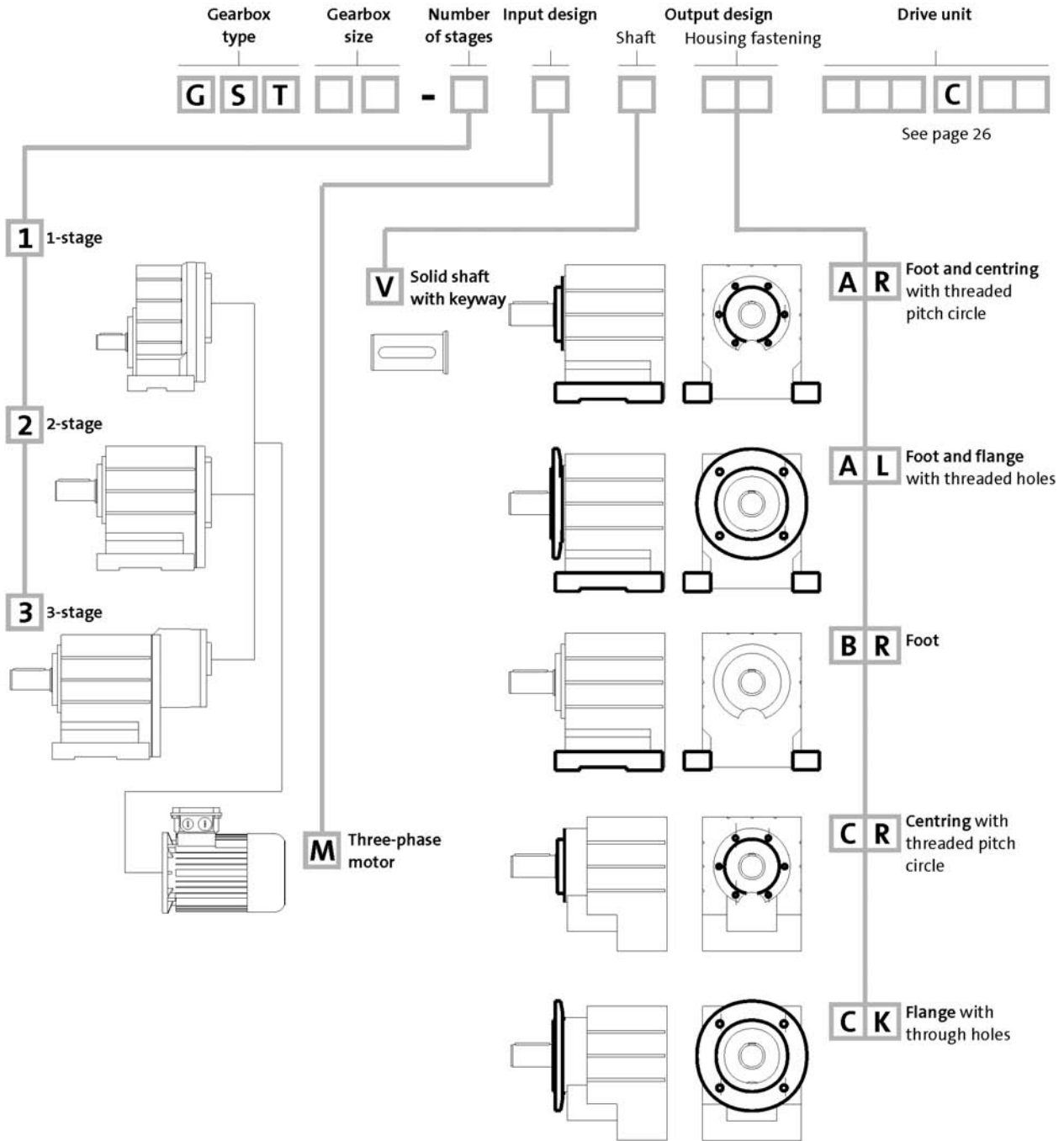
|   |     |
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# General information

## Product key

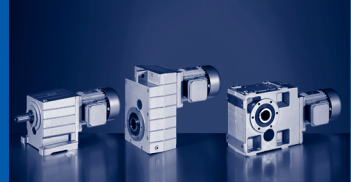
### Helical geared motors



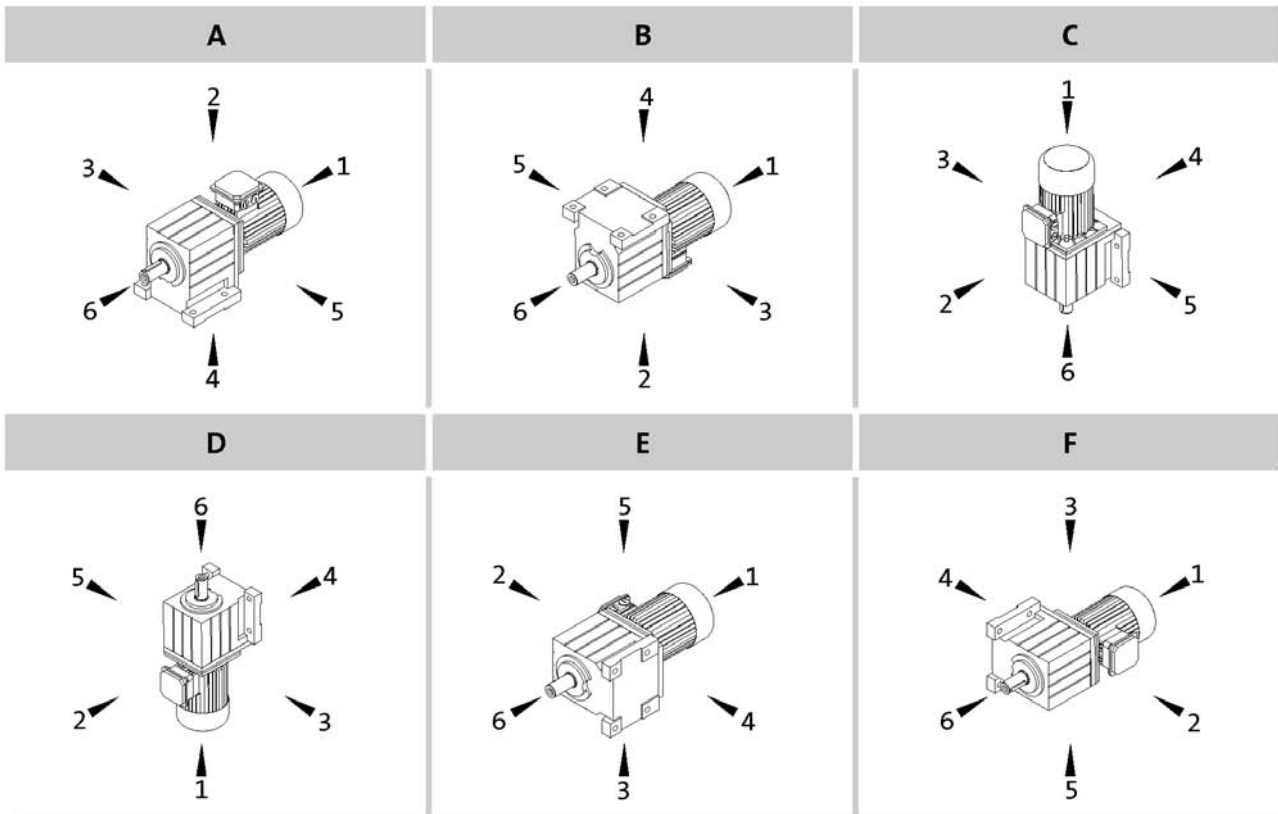
|           | Output design |                      |                      |
|-----------|---------------|----------------------|----------------------|
|           | V             | K                    | L                    |
|           | d x l [mm]    | Øa <sub>2</sub> [mm] | Øa <sub>2</sub> [mm] |
| GST03-2   | 14x28         | 120/140/160          |                      |
|           | 20x40         | 120/140/160          |                      |
| GST04-1   | 16x32         | 120/140/160          |                      |
| GST04-2   | 20x40         | 120/140/160          | 120/140              |
| GST05-1   | 20x40         | 120/140/160/200      |                      |
| GST05-2/3 | 25x50         | 120/140/160/200      | 120/140/160          |
| GST06-1   | 25x50         | 160/200              |                      |

|           | Output design |                      |                      |
|-----------|---------------|----------------------|----------------------|
|           | V             | K                    | L                    |
|           | d x l [mm]    | Øa <sub>2</sub> [mm] | Øa <sub>2</sub> [mm] |
| GST06-2/3 | 30x60         | 160/200              | 160/200              |
| GST07-1   | 30x60         | 200/250              |                      |
| GST07-2/3 | 40x80         | 200/250              | 200/250              |
| GST09-1   | 40x80         | 250/300              |                      |
| GST09-2/3 | 50x100        | 250/300              | 250/300              |
| GST11-2/3 | 60x120        | 300/350              | 300/350              |
| GST14-2/3 | 80x160        | 350/400              | 350/400              |





Mounting position (A...F) and position of system blocks (1...6)

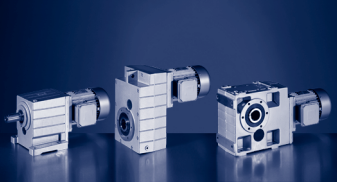


Terminal box: 2, 3, 4, 5

Gearbox designs

| Basic versions                   |  |
|----------------------------------|--|
| Motor efficiency                 | Increased efficiency (comparable with efficiency class IE2)  |
| Surface and corrosion protection | No OKS (unpainted, aluminium housing) for GST03<br>OKS-G (primer: grey)<br>OKS-S (paint: RAL 7012) |
| Lubricant                        | CLP 460 (mineral)  |
| Ventilation                      | Oil control plugs for GST05 ... 14<br>Breather elements for GST06 ... 14                           |

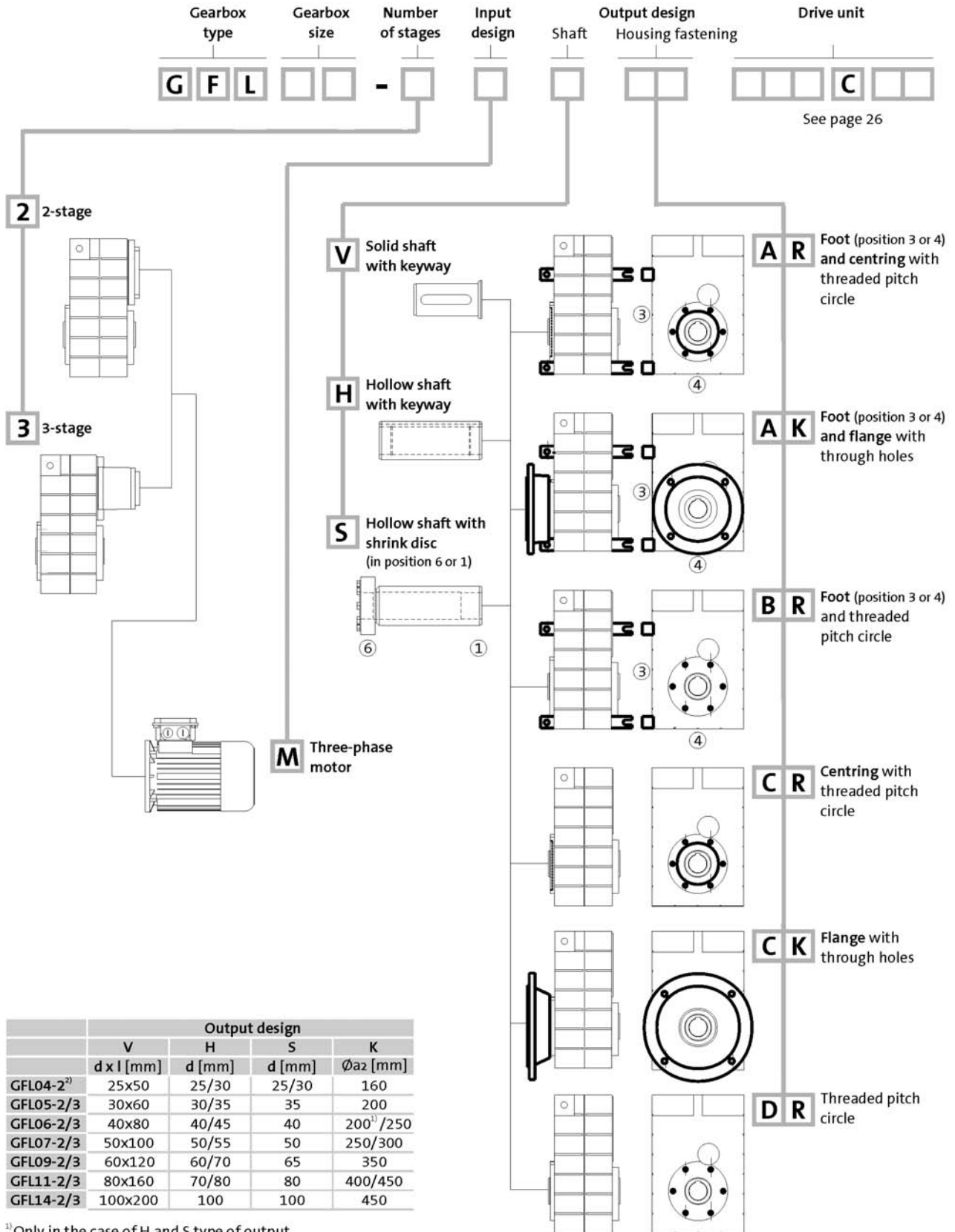
| Options                          |  |
|----------------------------------|--|
| Surface and corrosion protection | OKS-G (primer: grey) for GST03-2<br>OKS-S (special paint according to RAL)<br>OKS-M (special paint according to RAL)<br>OKS-L (special paint according to RAL) |
| Lubricant                        | CLP HC 320 (synthetic)<br>CLP HC 220 USDA H1 (synthetic)   |
| Shaft sealing rings              | Driven shaft: Viton  |
| Bearings                         | Driven shaft: reinforced for GST04 ... 09-2/3  |
| Ventilation                      | Breather elements for GST05<br>Compensation reservoir for GST09 ... 14-2 in mounting position C  |
| Nameplate                        | Metal nameplate (supplied loose)<br>Adhesive nameplate (supplied loose)  |



# General information

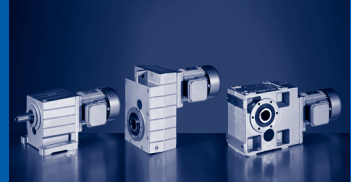
## Product key

### Shaft-mounted helical geared motors

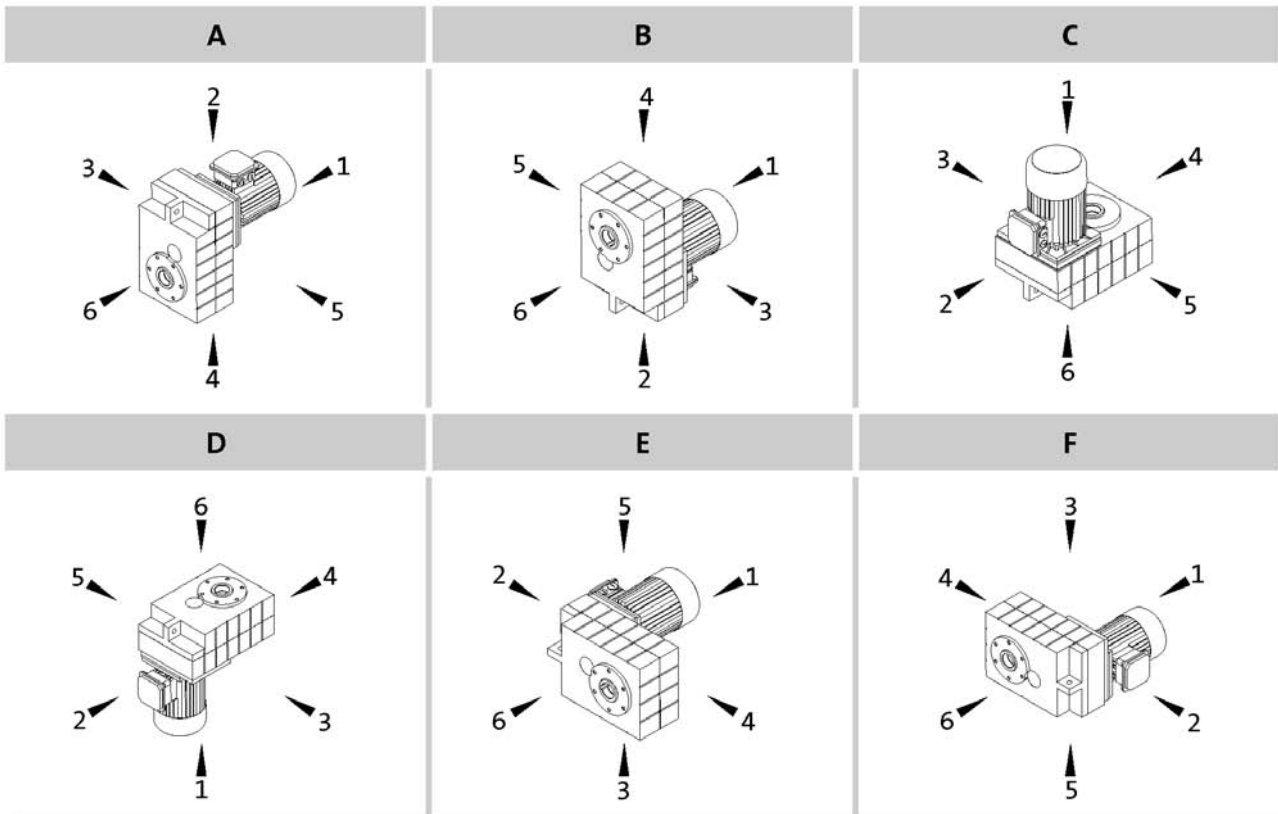


<sup>1)</sup> Only in the case of H and S type of output

<sup>2)</sup> Output H version not possible with motor size 090



Mounting position (A...F) and position of system blocks (1...6)



Hollow shaft: 0  
Solid shaft: 6  
Hollow shaft with shrink disc: 1, 6

Without foot: 0  
Foot: 3, 4  
Terminal box: 2, 3, 4, 5

Gearbox designs

| Basic versions                   |  |
|----------------------------------|--|
| Motor efficiency                 | Increased efficiency (comparable with efficiency class IE2)              |
| Surface and corrosion protection | OKS-G (primer: grey)<br>OKS-S (paint: RAL 7012)                          |
| Lubricant                        | CLP 460 (mineral)  |
| Ventilation                      | Oil control plugs for GFL05 ... 14<br>Breather elements for GFL06 ... 14 |

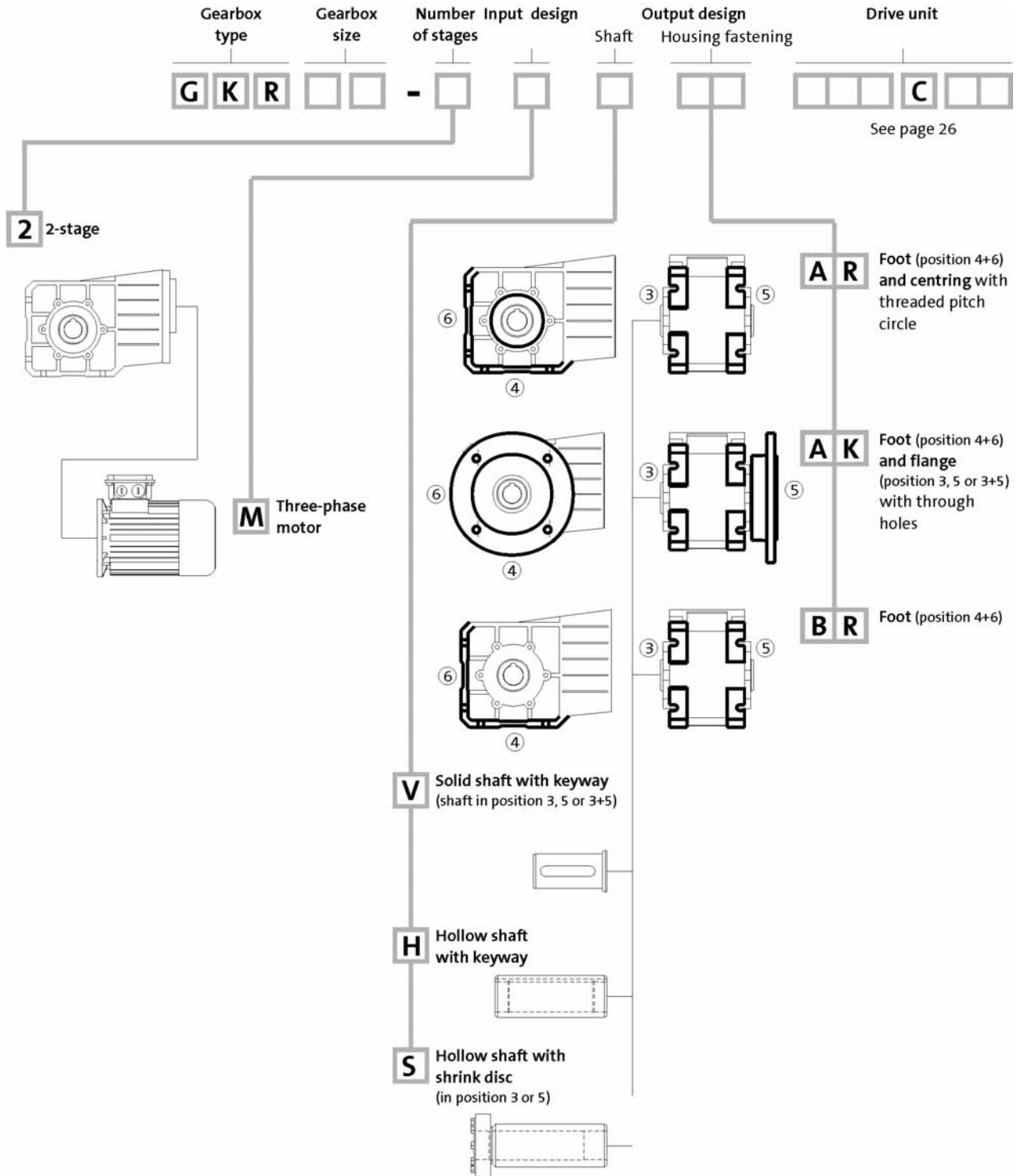
| Options                          |  |
|----------------------------------|--|
| Surface and corrosion protection | OKS-S (special paint according to RAL)<br>OKS-M (special paint according to RAL)<br>OKS-L (special paint according to RAL) |
| Lubricant                        | CLP HC 320 (synthetic)<br>CLP HC 220 USDA H1 (synthetic)   |
| Shaft sealing rings              | Driven shaft: Viton  |
| Ventilation                      | Breather elements for GFL05<br>Compensation reservoir for GFL09 ... 14-2 in mounting position C                            |
| Accessories                      | Rubber buffer for torque plate<br>Shrink disc cover<br>Mounting set for hollow shaft circlip                               |
| Nameplate                        | Metal nameplate (supplied loose)<br>Adhesive nameplate (supplied loose)  |



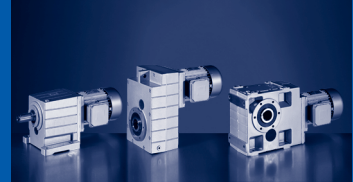
# General information

## Product key

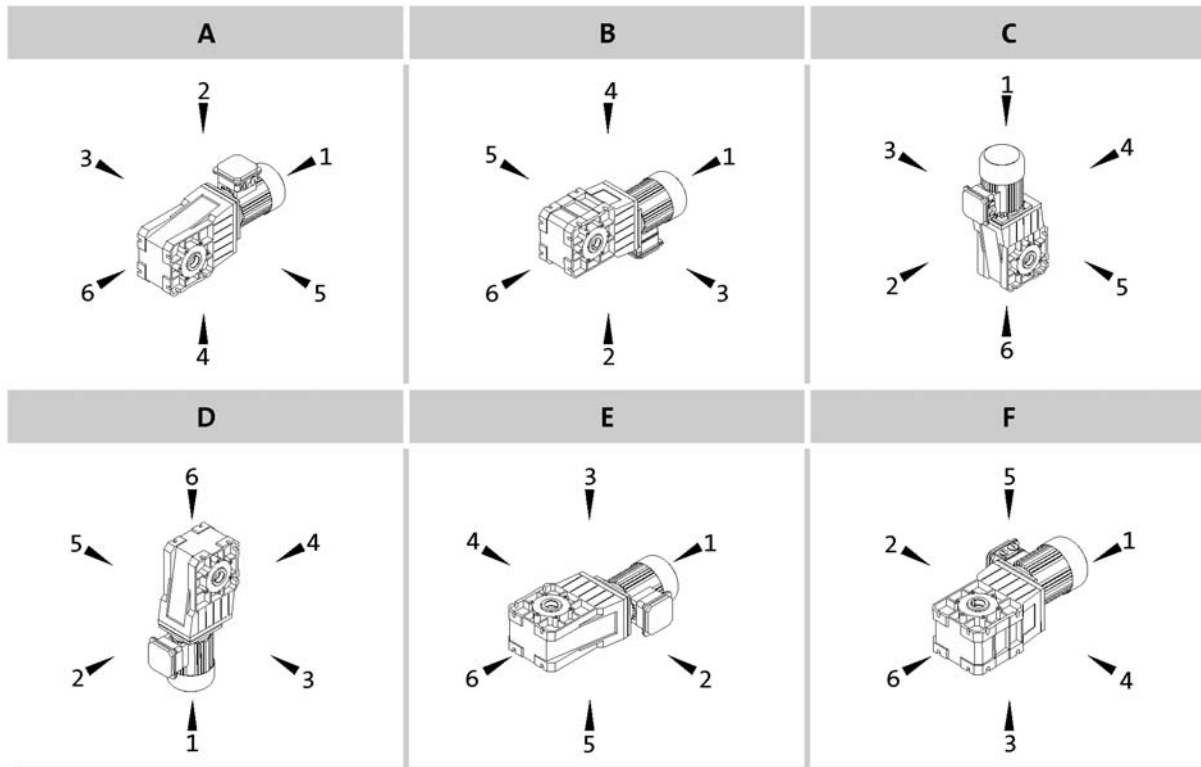
### Bevel geared motors



|         | Output design |        |        |                      |
|---------|---------------|--------|--------|----------------------|
|         | V             | H      | S      | K                    |
|         | d x l [mm]    | d [mm] | d [mm] | Øa <sub>2</sub> [mm] |
| GKR03-2 | 20x40         | 18/20  | 20     | 110/120              |
| GKR04-2 | 20x40         | 20/25  | 20     | 120/160              |
| GKR05-2 | 30x60         | 30/35  | 30/35  | 160/200              |
| GKR06-2 | 35x70         | 40/45  | 40     | 200/250              |



Mounting position (A...F) and position of system blocks (1...6)



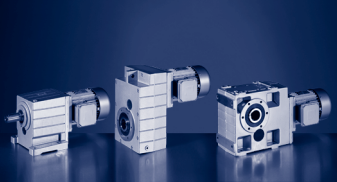
Hollow shaft: 0  
Solid shaft: 3, 5, 8 (3+5)  
Hollow shaft with shrink disc: 3, 5

Without flange: 0  
Flange: 3, 5, 8 (3+5)  
Terminal box: 2, 3, 4, 5

Gearbox designs

| Basic versions                   |  |
|----------------------------------|--|
| Motor efficiency                 | Increased efficiency (comparable with efficiency class IE2)      |
| Surface and corrosion protection | No OKS (unpainted, aluminium housing)<br>OKS-S (paint: RAL 7012) |
| Lubricant                        | CLP 460 (mineral)  |
| Ventilation                      | Breather elements for GKR06                                      |

| Options                          |   |
|----------------------------------|---|
| Surface and corrosion protection | OKS-G (primer: grey)<br>OKS-S (special paint according to RAL)<br>OKS-M (special paint according to RAL)<br>OKS-L (special paint according to RAL)  |
| Lubricant                        | CLP HC 320 (synthetic)<br>CLP HC 220 USDA H1 (synthetic)  |
| Shaft sealing rings              | Driven shaft: Viton   |
| Accessories                      | Rubber buffer for torque plate (GKR 03/04 only)<br>Torque plate on threaded pitch circle<br>Housing foot torque plate (GKR05/06 only)<br>2nd output shaft end<br>Shrink disc cover<br>Hoseproof hollow shaft cover<br>Mounting set for hollow shaft circlip |
| Nameplate                        | Metal nameplate (supplied loose)<br>Adhesive nameplate (supplied loose)   |

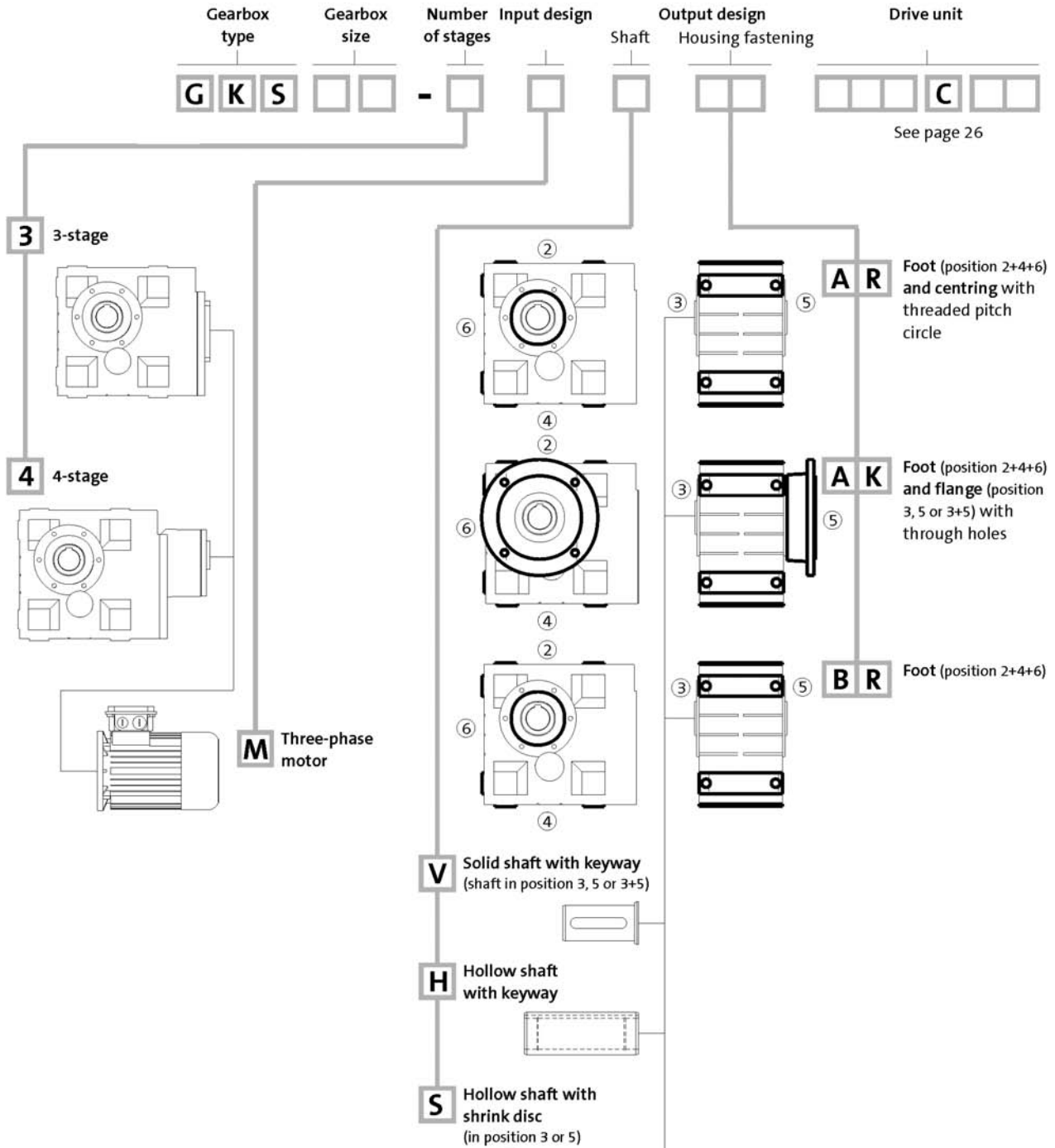


# General information

## Product key

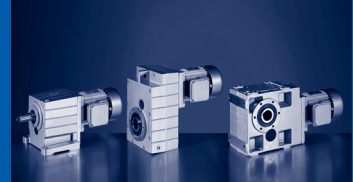
### Helical-bevel geared motors

1

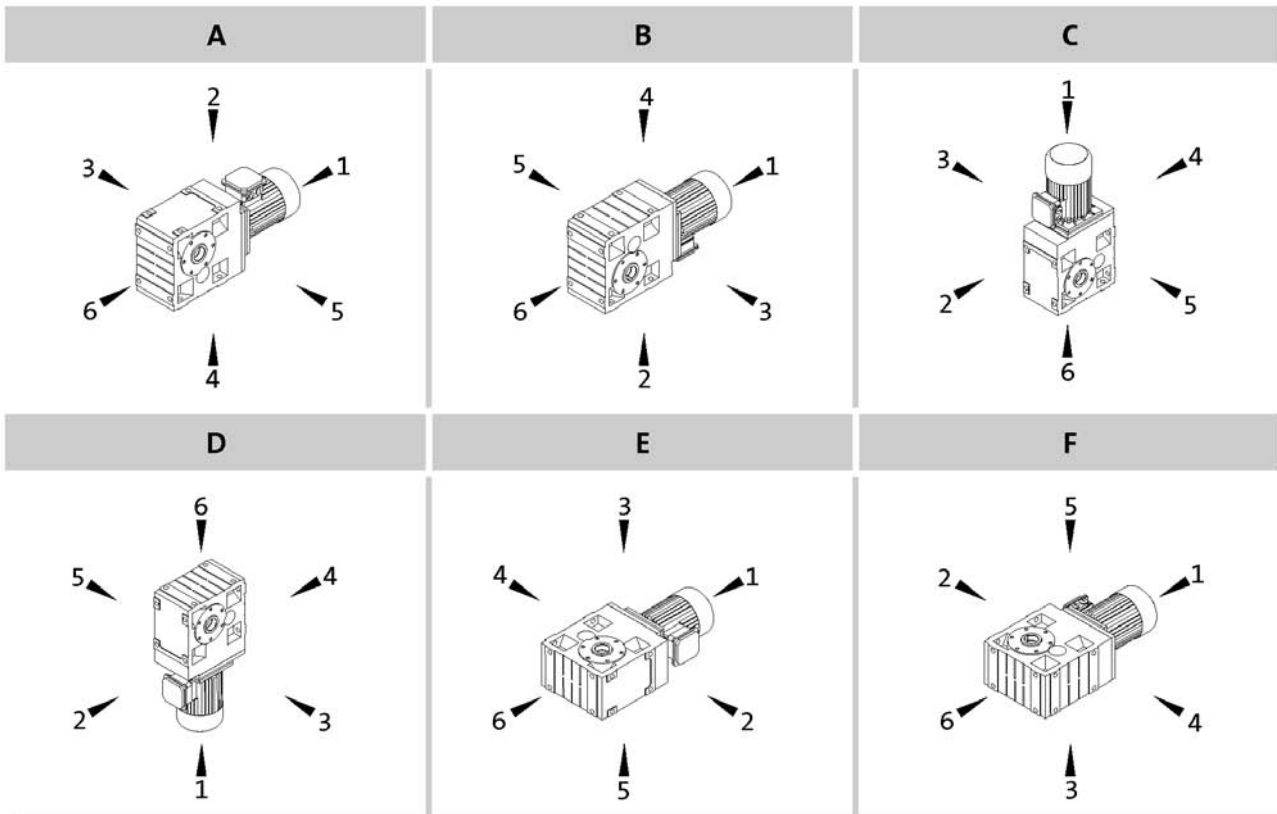


|           | Output design |        |        |                        |
|-----------|---------------|--------|--------|------------------------|
|           | V             | H      | S      | K                      |
|           | d x l [mm]    | d [mm] | d [mm] | Øa <sub>2</sub> [mm]   |
| GKS04-3   | 25x50         | 25/30  | 25/30  | 160                    |
| GKS05-3/4 | 30x60         | 30/35  | 35     | 200                    |
| GKS06-3/4 | 40x80         | 40/45  | 40     | 200 <sup>1)</sup> /250 |
| GKS07-3/4 | 50x100        | 50/55  | 50     | 250/300                |
| GKS09-3/4 | 60x120        | 60/70  | 65     | 350                    |
| GKS11-3/4 | 80x160        | 70/80  | 80     | 400/450                |
| GKS14-3/4 | 100x200       | 100    | 100    | 450                    |

<sup>1)</sup> Only in the case of H and S type of output



Mounting position (A...F) and position of system blocks (1...6)



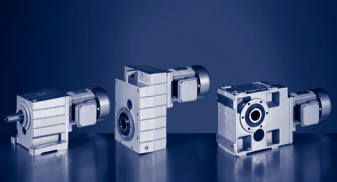
Hollow shaft: 0  
Solid shaft: 3, 5, 8 (3+5)  
Hollow shaft with shrink disc: 3, 5

Without flange: 0  
Flange: 3, 5, 8 (3+5)  
Terminal box: 2, 3, 4, 5

Gearbox designs

| Basic versions                   |  |
|----------------------------------|--|
| Motor efficiency                 | Increased efficiency (comparable with efficiency class IE2)              |
| Surface and corrosion protection | OKS-G (primer: grey)<br>OKS-S (paint: RAL 7012)                          |
| Lubricant                        | CLP 460 (mineral)  |
| Ventilation                      | Oil control plugs for GKS05 ... 14<br>Breather elements for GKS06 ... 14 |

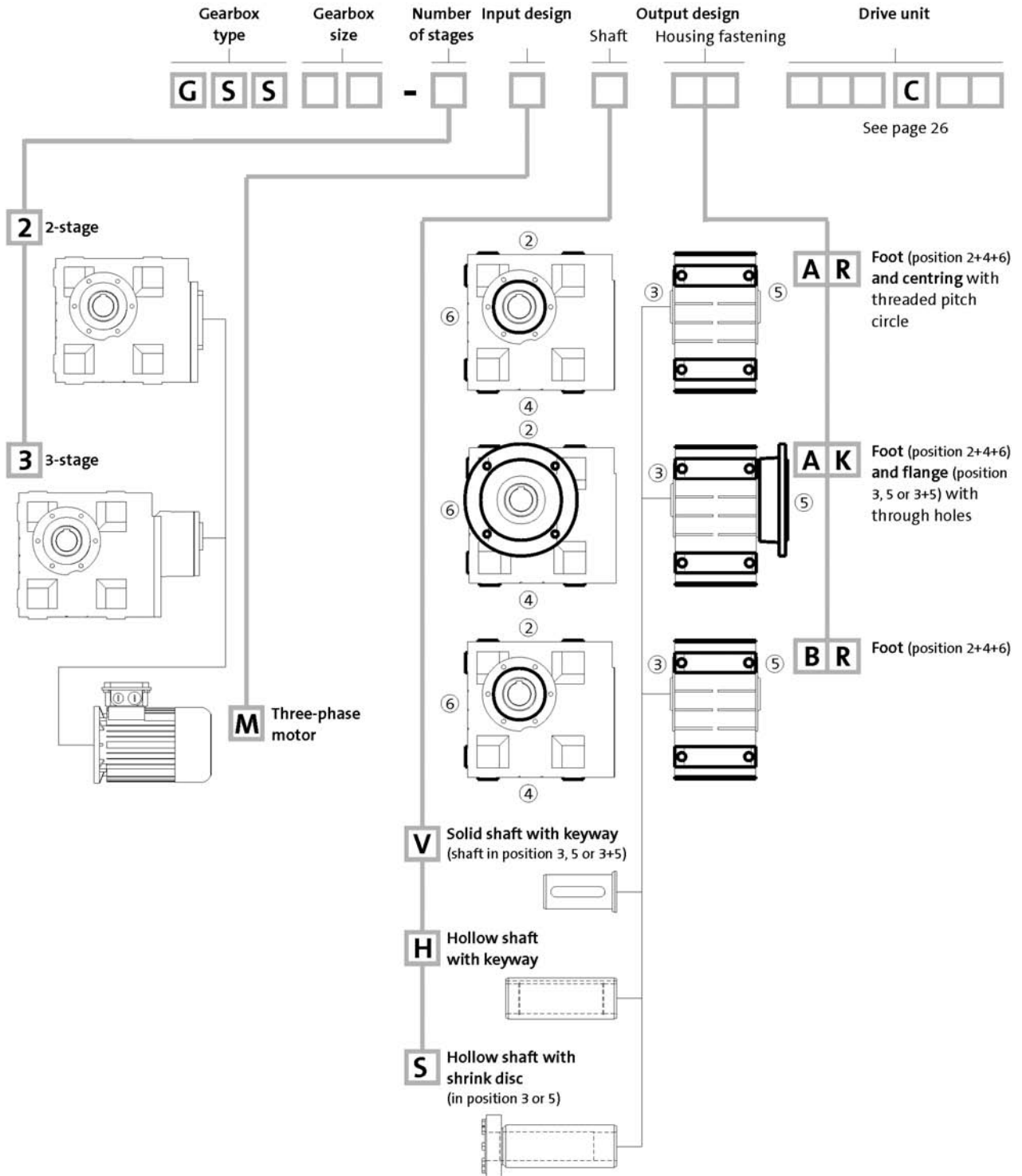
| Options                          |  |
|----------------------------------|--|
| Surface and corrosion protection | OKS-S (special paint according to RAL)<br>OKS-M (special paint according to RAL)<br>OKS-L (special paint according to RAL)   |
| Lubricant                        | CLP HC 320 (synthetic)<br>CLP HC 220 USDA H1 (synthetic)   |
| Shaft sealing rings              | Driven shaft: Viton  |
| Ventilation                      | Breather elements for GKS05<br>Compensation reservoir for GKS09 ... 14-3 in mounting position C  |
| Accessories                      | Torque plate on threaded pitch circle<br>Housing foot torque plate<br>2nd output shaft end<br>Shrink disc cover<br>Hoseproof hollow shaft cover<br>Mounting set for hollow shaft circlip |
| Nameplate                        | Metal nameplate (supplied loose)<br>Adhesive nameplate (supplied loose)  |



# General information

## Product key

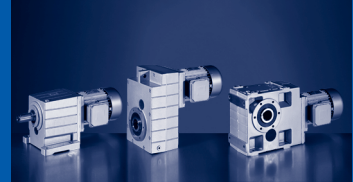
### Helical-worm geared motors



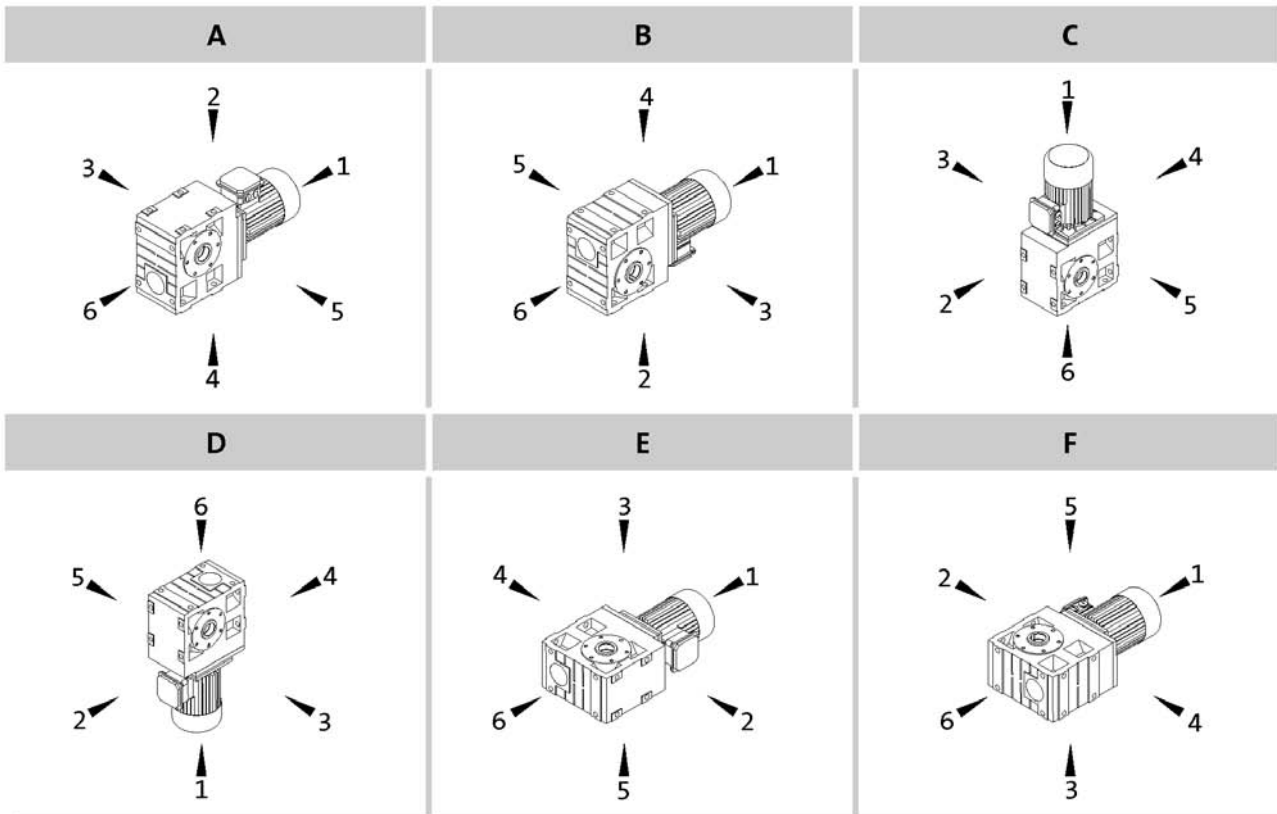
|           | Output design |        |        |                        |
|-----------|---------------|--------|--------|------------------------|
|           | V             | H      | S      | K                      |
|           | d x l [mm]    | d [mm] | d [mm] | Øa <sub>2</sub> [mm]   |
| GSS04-2   | 25x50         | 25/30  | 25/30  | 160                    |
| GSS05-2/3 | 30x60         | 30/35  | 35     | 200                    |
| GSS06-2/3 | 40x80         | 40/45  | 40     | 200 <sup>1)</sup> /250 |
| GSS07-2/3 | 50x100        | 50/55  | 50     | 250/300                |

<sup>1)</sup> Only in the case of H and S type of output





Mounting position (A...F) and position of system blocks (1...6)



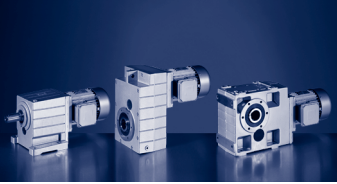
Hollow shaft: 0  
Solid shaft: 3, 5, 8 (3+5)  
Hollow shaft with shrink disc: 3, 5

Without flange: 0  
Flange: 3, 5, 8 (3+5)  
Terminal box: 2, 3, 4, 5

Gearbox designs

| Basic versions                   |  |
|----------------------------------|--|
| Motor efficiency                 | Increased efficiency (comparable with efficiency class IE2)              |
| Surface and corrosion protection | OKS-G (primer: grey)<br>OKS-S (paint: RAL 7012)                          |
| Lubricant                        | CLP PG 460 (synthetic)   |
| Ventilation                      | Oil control plugs for GSS05 ... 07<br>Breather elements for GSS05 ... 07 |

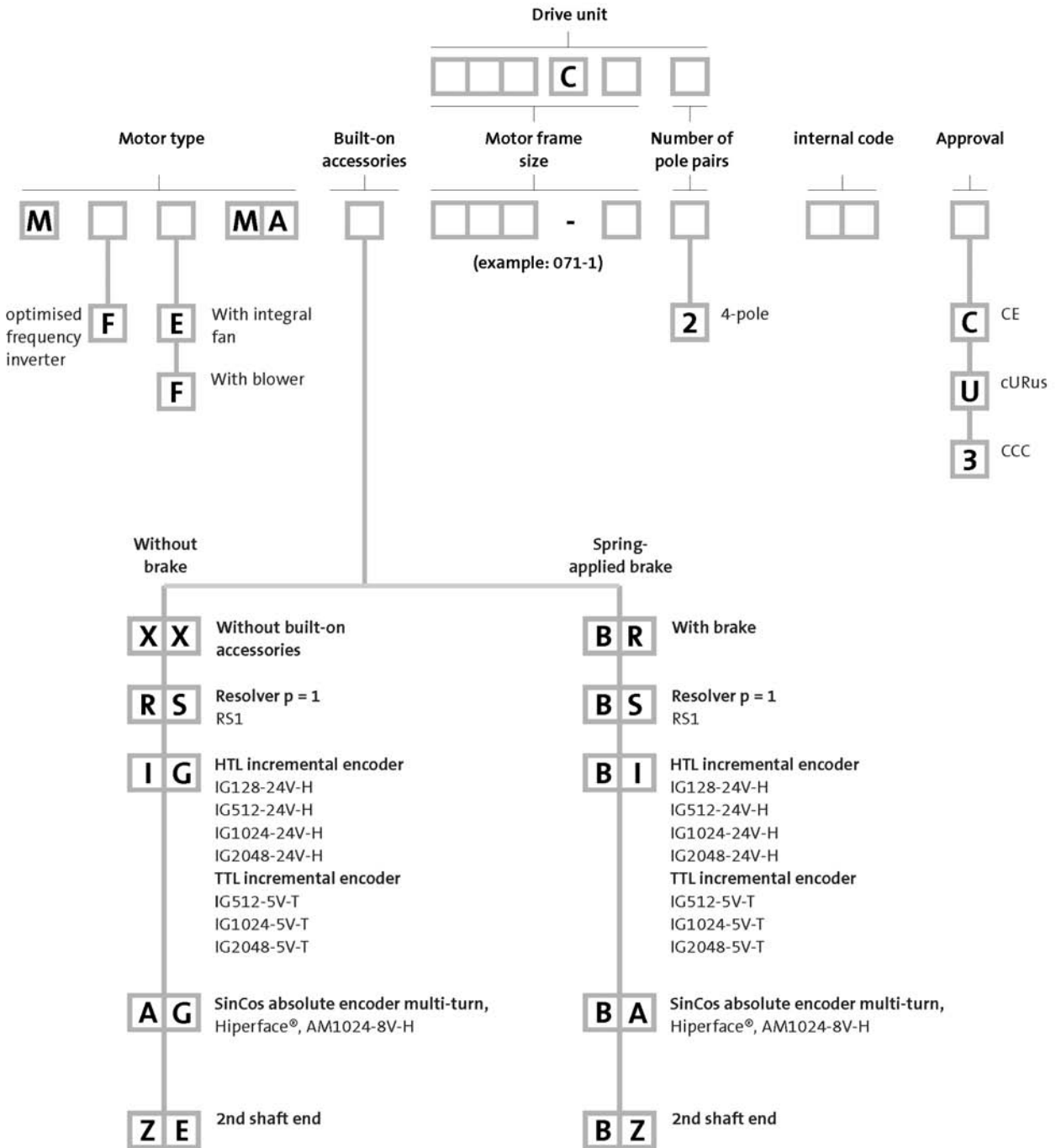
| Options                          |  |
|----------------------------------|--|
| Surface and corrosion protection | OKS-S (special paint according to RAL)<br>OKS-M (special paint according to RAL)<br>OKS-L (special paint according to RAL)   |
| Lubricant                        | CLP HC 220 USDA H1 (synthetic)   |
| Shaft sealing rings              | Driven shaft: Viton  |
| Accessories                      | Torque plate on threaded pitch circle<br>Housing foot torque plate<br>2nd output shaft end<br>Shrink disc cover<br>Hoseproof hollow shaft cover<br>Mounting set for hollow shaft circlip |
| Nameplate                        | Metal nameplate (supplied loose)<br>Adhesive nameplate (supplied loose)  |

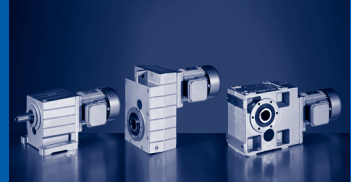


# General information

## Product key

### Three-phase AC motors





## Geared motors

Our quality standards in terms of development, material selection, production and assembly satisfy the very high requirements for a durable drive system. The distinctive design – cubic and compact – integrates seamlessly into the modern industrial landscape.

The MF geared motors are fully optimised for operation on an inverter.

The advantages for you:

- ▶ Up to 2 motor sizes smaller than standard three-phase AC motors
- ▶ The motors surpass the minimum efficiency levels of efficiency class IE2
- ▶ Large setting range: 1:24 (without field weakening)
- ▶ Dynamic due to low moment of inertia

### Geared motor power range

Lenze inverter-optimised geared motors are available in a power range from 0.55 ... 22 kW.

### Operational reliability for use in industrial applications

Even under harsh operating conditions, the reliability of the motors is assured by

- ▶ Insulation class F
- ▶ IP55
- ▶ Scalable measures for surface and corrosion protection

### Motor options

- ▶ Spring-applied brake
- ▶ Blower
- ▶ Thermal protection variants
- ▶ Connectors
- ▶ Feedback systems
- ▶ Second shaft end
- ▶ Protection cover
- ▶ UL/CSA approval: cURus
- ▶ CCC approval

### Compact

The modular base concept and the high power density due to ground gears with optimised teeth profiles make extremely compact designs possible.

### Adaptable and compatible

Lenze geared motors can be adapted to almost any drive task, thanks to the variety of DE and NDE designs that are available.

### Easy to integrate

Highly functional housings enable Lenze gearboxes to be integrated into the machine environment easily.

### Quiet

Optimised geometry of the gear teeth minimises noise generation.

### Closely stepped output speed

The large ratio ranges of the gearboxes combined with the small ratio step  $\phi = 1.12$  enable the required output speed to be selected with precision.

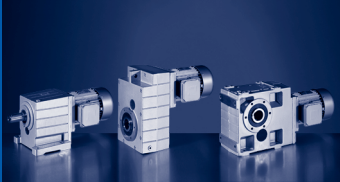
### Reduced backlash

The two-stage basic concept (three-stage helical-bevel gearboxes), low-backlash connections and the high quality of the teeth (due to precision manufacturing) result in reduced output backlash in comparison with similar gearboxes.

### Efficient

The comparatively high efficiency of the gearboxes, in conjunction with the efficient three-phase AC motors, ensures a uniformly efficient drive system. In this way, all the energy saving potential is exploited.





### General information about the data provided in this catalogue

#### Powers, torques and speeds

The powers, torques and speeds specified in this catalogue are rounded values and are valid under the following conditions:

- ▶ Operating time/day = 8 h (100% OT)
- ▶ Duty class I for up to 10 switching operations/h
- ▶ Mounting positions and designs in this catalogue
- ▶ Standard lubricant
- ▶  $T_{amb} = 20\text{ °C}$  for gearboxes,  
 $T_{amb} = 40\text{ °C}$  for motors (in accordance with EN 60034)
- ▶ Site altitude  $< = 1000\text{ m amsl}$
- ▶ The selection tables provide the permissible mechanical powers and torques. For notes on the thermal power limit, see chapter drive dimensioning.
- ▶ The rated power specified for motors and geared motors applies to operating mode S1 (in accordance with EN 60034).

Under different operating conditions, the values obtained may vary from those listed here.

In the case of extreme operating conditions, please consult your Lenze sales office.

#### Load capacity $c$ of gearbox

Rated value for the load capacity of Lenze geared motors.

- ▶  $c$  is the ratio of the permissible rated torque of the gearbox to the rated torque supplied by the drive component (e.g. the built-in Lenze motor).
- ▶ The value of  $c$  must always be greater than the value of the application factor  $k$  calculated for the application.

#### Application factor $k$ (according to DIN 3990)

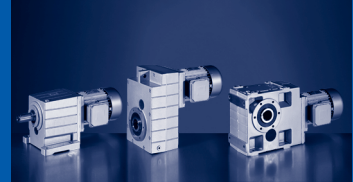
Takes into account the influence of temporally variable loads which are actually present during the anticipated operating time of gearboxes and geared motors.

$k$  is determined by:

- ▶ The type of load
- ▶ The load intensity
- ▶ Temporal influences

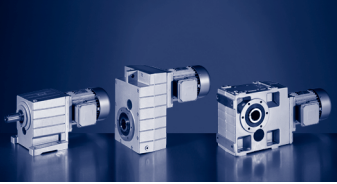
# General information

## List of abbreviations



|                |                      |                                |
|----------------|----------------------|--------------------------------|
| $\eta_{100\%}$ | [%]                  | Efficiency                     |
| $\eta_{75\%}$  | [%]                  | Efficiency                     |
| $\eta_a$       |                      | Efficiency                     |
| $\eta_{c=1}$   |                      | Efficiency                     |
| $\cos \varphi$ |                      | Power factor                   |
| $F_{ax,+}$     | [N]                  | Max. axial force               |
| $f_{in,max}$   | [Hz]                 | Max. input frequency           |
| $f_{max}$      | [kHz]                | Limit frequency                |
| $f_{max}$      | [kHz]                | Max. switching frequency       |
| $F_{rad,max}$  | [N]                  | Max. radial force              |
| $H_{max}$      | [m]                  | Site altitude                  |
| $I_{in,max}$   | [A]                  | Max. input current             |
| $I_{max}$      | [A]                  | Max. short-time DC-bus current |
| $I_{max}$      | [A]                  | Max. current                   |
| $I_{max}$      | [A]                  | Max. current brake chopper     |
| $I_{max}$      | [A]                  | Max. current consumption       |
| $I_{max}$      | [A]                  | Max. current                   |
| $I_{max}$      | [A]                  | Max. DC-bus current            |
| $I_{N,\Delta}$ | [A]                  | Rated current                  |
| $I_{N,\gamma}$ | [A]                  | Rated current                  |
| $I_a / I_N$    |                      | Starting current               |
| $J$            | [kgcm <sup>2</sup> ] | Moment of inertia              |
| $m$            | [kg]                 | Mass                           |
| $M_a$          | [Nm]                 | Starting torque                |
| $M_B$          | [Nm]                 | Braking torque                 |
| $M_b$          | [Nm]                 | Stalling torque                |
| $M_k$          | [Nm]                 | rated torque                   |
| $M_N$          | [Nm]                 | rated torque                   |
| $n_{max}$      | [r/min]              | Max. speed                     |
| $n_{max}$      | [r/min]              | Max. gearbox input speed       |
| $n_N$          | [r/min]              | Rated speed                    |
| $P$            | [kW]                 | Coil power                     |
| $P$            | [kW]                 | Typical motor power            |
| $P_{max}$      | [kW]                 | Max. power input               |
| $P_N$          | [kW]                 | Rated power                    |

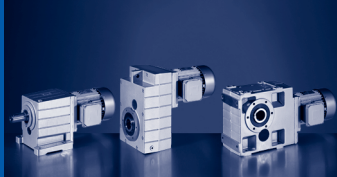
|                |                 |  |
|----------------|-----------------|--|
| $Q_{BW}$       | [MJ]            | Friction energy                        |
| $Q_E$          | [KJ]            | Maximum switching energy               |
| $R$            | [ $\Omega$ ]    | Insulation resistance                  |
| $R_N$          | [ $\Omega$ ]    | Rated resistance                       |
| $S_{h\u00fc}$  | [1/h]           | Transition operating frequency         |
| $T$            | [ $^{\circ}$ C] | Operating temperature                  |
| $T$            | [ $^{\circ}$ C] | Rated temperature                      |
| $T$            | [ $^{\circ}$ C] | Max. ambient temperature of bearing    |
| $T$            | [ $^{\circ}$ C] | Max. surface temperature               |
| $T$            | [ $^{\circ}$ C] | Max. ambient temperature for transport |
| $T$            | [ $^{\circ}$ C] | Min. ambient storage temperature       |
| $T$            | [ $^{\circ}$ C] | Min. ambient temperature for transport |
| $T$            | [ $^{\circ}$ C] | Ambient temperature                    |
| $t$            | [ms]            | Min. rest time                         |
| $t_1$          | [ms]            | Engagement time                        |
| $t_{11}$       | [ms]            | Delay time                             |
| $t_{12}$       | [ms]            | Rise time                              |
| $t_2$          | [ms]            | Disengagement time                     |
| $T_{max}$      | [ $^{\circ}$ C] | Max. reset temperature                 |
| $T_{min}$      | [ $^{\circ}$ C] | Min. reset temperature                 |
| $T_{opr,max}$  | [ $^{\circ}$ C] | Max. ambient operating temperature     |
| $T_{opr,min}$  | [ $^{\circ}$ C] | Min. ambient operating temperature     |
| $t_{\ddot{u}}$ | [ms]            | Overexcitation time                    |
| $U_{in,max}$   | [V]             | Max. input voltage                     |
| $U_{in,min}$   | [V]             | Min. input voltage                     |
| $U_{max}$      | [V]             | Max. input voltage                     |
| $U_{max}$      | [V]             | Max. mains voltage                     |
| $U_{max}$      | [V]             | Min. input voltage                     |
| $U_{min}$      | [V]             | Min. mains voltage                     |
| $U_{N,\Delta}$ | [V]             | Rated voltage                          |
| $U_{N,\gamma}$ | [V]             | Rated voltage                          |
| $Z_{ro}$       | [ $\Omega$ ]    | Rotor impedance                        |
| $Z_{rs}$       | [ $\Omega$ ]    | Impedance                              |
| $Z_{so}$       | [ $\Omega$ ]    | Stator impedance                       |



## General information

### List of abbreviations

|          |   |
|----------|---|
| CE       | Communauté Européenne   |
| CSA      | Canadian Standards Association  |
| DIN      | Deutsches Institut für Normung e.V.   |
| EMC      | Electromagnetic compatibility   |
| EN       | European standard   |
| IEC      | International Electrotechnical Commission                                       |
| IM       | International Mounting Code   |
| IP       | International Protection Code   |
| NEMA     | National Electrical Manufacturers Association                                   |
| UL       | Underwriters Laboratory Listed Product  |
| UR       | Underwriters Laboratory Recognized Product                                      |
| VDE      | Verband deutscher Elektrotechniker (Association of German Electrical Engineers) |
| CCC      | China Compulsory Certificate  |
| GOST     | Certificate for Russian Federation  |
| cURus    | Combined certification marks of UL for the USA and Canada                       |
| UkrSEPRO | Certificate for Ukraine   |



**We want to be sure that you receive the correct products in good time.**

To allow us to achieve this we need:

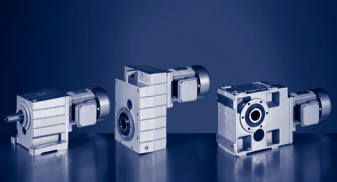
- ▶ Your address and your company data
- ▶ Our product key for the individual products in this catalogue
- ▶ Your delivery data such as delivery date and delivery address

### **Ordering procedure**

Please use the ordering information checklist to ensure that you provide all the order information required for the various products.

The ordering information checklist, the product key, the basic versions, options, mounting position and position of the system blocks will be found in the General – Product key section.

A list of Lenze sales offices can be found at the end of this catalogue.



# General information

## Ordering details checklist

Offer

Page \_\_ of \_\_

Order

Customer No.

Job No.

Fax No.

Sender

Company

Made out by (name)

Street/P.O. Box

Department

P.O. Box, City

Telephone No.

Date      Signature

Delivery address (if different)

Street/P.O. Box

Desired delivery date

P.O. Box, City

Dispatching notes

Invoice recipient (if different)

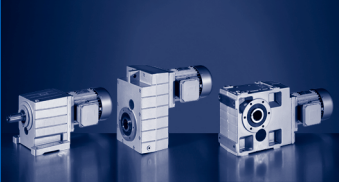
Street/P.O. Box

Postal code, City

1







# General information

## Ordering details checklist

### Shaft-mounted helical geared motors

Customer No.

Job No.

Page \_\_\_

Quantity

Rated frequency

120 Hz

Ratio i

GFL  -  2  3  M

V  H  S

A  B  C  D  R  K

Motor frame size  C

Hollow shaft d =  mm      Flange a<sub>2</sub> =  mm

Mounting position

A B C D E F

Position of system blocks

Shaft/shrink disc      Foot      Terminal box

0 6 1      0 3 4      2 3 4 5

Surface and corrosion protection

OKS-S colour: RAL 7012       OKS-G (primed)

### Options

Special lubricants

CLP HC 320 (synthetic)       CLP HC 220 USDA H1 (for the food industry)

Surface and corrosion protection

OKS-S (small)       OKS-M (medium)      RAL

OKS-L (high)       OKS-G (primed)

Accessories

Rubber buffer for torque support

Mounting set for hollow-shaft circlip

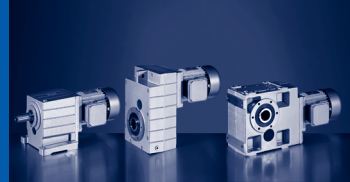
Hollow shaft cover, hoseproof

Shaft sealing rings

Viton

Breathing by Ventilation

Breather elements for GFL05       Compensation reservoir in mounting position for GFL09 ... 14-2



**Bevel geared motors**

Customer No.

Job No.

Page \_\_

Quantity

Rated frequency  120 Hz

Ratio i

GKR  -  2  M
   
  
 Motor frame size  C 
  
 Hollow shaft d =  mm      Flange a<sub>2</sub> =  mm

Mounting position

|                          |                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| A                        | B                        | C                        | D                        | E                        | F                        |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Position of system blocks

|                          |                          |                          |
|--------------------------|--------------------------|--------------------------|
| Shaft/shrink disc        | Flange                   | Terminal box             |
| 0 3 4 8                  | 0 3 5 8                  | 2 3 4 5                  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Surface and corrosion protection  Without OKS (unpainted)

**Options**

Special lubricants

|   |   |
|---|---|
| <input type="checkbox"/> CLP HC 320 (synthetic) | <input type="checkbox"/> CLP HC 220 USDA H1 (for the food industry) |
|---|---|

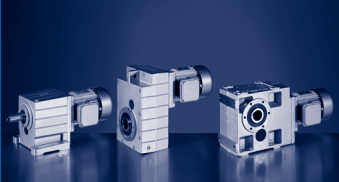
Surface and corrosion protection

|  |   |                          |
|--|---|--------------------------|
| <input type="checkbox"/> OKS-S (small) | <input type="checkbox"/> OKS-M (medium) | RAL <input type="text"/> |
| <input type="checkbox"/> OKS-L (high)  | <input type="checkbox"/> OKS-G (primed) |                          |

Accessories

|   |   |
|---|---|
| <input type="checkbox"/> Rubber buffer for torque support (only GKR03/04) | <input type="checkbox"/> Torque support for threaded pitch circle |
| <input type="checkbox"/> Torque support for housing foot (only GKR05/06)  | <input type="checkbox"/> Mounting set for hollow-shaft circlip    |
| <input type="checkbox"/> 2nd output shaft end                             | <input type="checkbox"/> Hollow shaft cover, hoseproof            |
| <input type="checkbox"/> Shrink disc cover                                |   |

Shaft sealing rings  Viton



# General information

## Ordering details checklist

### Helical-bevel geared motors

Customer No.

Job No.

Page \_\_\_

Quantity

Rated frequency

 120 Hz

Ratio i

GKS  -  3  4  M  V  H  S  A  R  B  K  Motor frame size  C

Hollow shaft d =  mm      Flange a<sub>2</sub> =  mm

Mounting position

A B C D E F

Position of system blocks

Shaft/shrink disc      Flange      Terminal box

0 3 4 8      0 3 5 8      2 3 4 5

Surface and corrosion protection

 OKS-S colour: RAL 7012       OKS-G (primed)

### Options

Special lubricants

 CLP HC 320 (synthetic)       CLP HC 220 USDA H1 (for the food industry)

Surface and corrosion protection

 OKS-S (small)       OKS-M (medium)      RAL 
 OKS-L (high)       OKS-G (primed)

Accessories

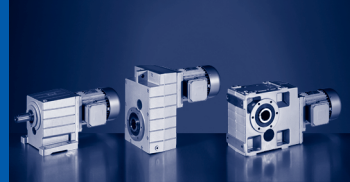
 Torque support for housing foot       Torque support for threaded pitch circle
 2nd output shaft end       Mounting set for hollow-shaft circlip
 Shrink disc cover       Hollow shaft cover, hoseproof

Shaft sealing rings

 Viton

Breathing by Ventilation

 Breather elements for GKS05       Compensation reservoir in mounting position for GKS09 ... 14-3



Helical-worm geared motors

Customer No.

Job No.

Page \_\_

Quantity

Rated frequency  120 Hz

Ratio i

GSS  -  2  3  M  V  H  S  A  R  B  K } Motor frame size  C   
 Hollow shaft d =  mm      Flange a<sub>2</sub> =  mm

Mounting position A B C D E F

Position of system blocks

|   |   |   |
|---|---|---|
| Shaft/shrink disc   | Flange  | Terminal box  |
| 0 3 4 8   | 0 3 5 8   | 2 3 4 5   |
| <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

Surface and corrosion protection  OKS-S colour: RAL 7012       OKS-G (primed)

Options

Special lubricants  CLP HC 220 USDA H1 (for the food industry)

Surface and corrosion protection

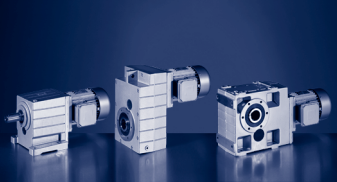
|  |   |                          |
|--|---|--------------------------|
| <input type="checkbox"/> OKS-S (small) | <input type="checkbox"/> OKS-M (medium) | RAL <input type="text"/> |
| <input type="checkbox"/> OKS-L (high)  | <input type="checkbox"/> OKS-G (primed) |                          |

Accessories

|  |   |
|--|---|
| <input type="checkbox"/> Torque support for housing foot | <input type="checkbox"/> Torque support for threaded pitch circle |
| <input type="checkbox"/> 2nd output shaft end            | <input type="checkbox"/> Mounting set for hollow-shaft circlip    |
| <input type="checkbox"/> Shrink disc cover               | <input type="checkbox"/> Hollow shaft cover, hoseproof            |

Shaft sealing rings  Viton

Breathing by Ventilation  Breather elements for GSS05



# General information

## Ordering details checklist

### Three-phase AC motors options

Customer No.

Job No.

Page \_\_\_

#### Motor connection

Terminal box

- with plug-in connector ICN 6-pin.  
Adhere to permissible rated motor current limit 20 A!
- with plug-in connector ICN 8-pin.  
Adhere to permissible rated motor current limit 20 A!
- with plug-in connector HAN10E.  
Adhere to permissible rated current limit 16 A!
- with plug-in connector HAN-Modular.  
Adhere to permissible rated current limit 16 / 40 A!

Cable entry

only with M□□MAXX063 ... 132

or terminal box with plug-in connector  
in position

|  |                          |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|  | 1                        | 2                        | 3                        | 4                        | 5                        |
|  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

#### Blower

- 1~
- 3~

- Terminal box with plug-in connector ICN

Terminal box position

|  |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
|  | 2                        | 3                        | 4                        | 5                        |
|  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

#### Spring-applied brake

Brake version

- Standard
- Longlife

Brake size

Rated instead of  
Characteristic

 Nm

Rated voltage

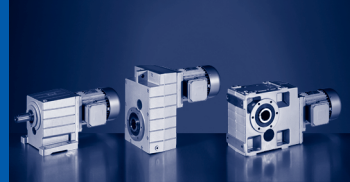
|                          |                          |                        |
|--------------------------|--------------------------|------------------------|
| AC                       | DC                       |                        |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/> V |

Rectifier Only in the case of AC supply voltage

- Half-wave rectifier
- Bridge rectifier
- Bridge/half-wave rectifier  
(overexcitation)
- Bridge/half-wave rectifier  
(holding current reduction)

Brake options Manual release lever  
in position

|  |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
|  | 2                        | 3                        | 4                        | 5                        |
|  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



Customer No.

Job No.

Page \_\_

Speed/position encoder

Resolver  RS1

Incremental encoder HTL  IG128-24V-H  IG512-24V-H  IG1024-24V-H  IG2048-24V-H

Incremental encoder TTL  IG512-5V-T  IG1024-5V-T  IG2048-5V-T

Feedback with ICN connector  IG128-24V-H not possible with plug-in connector!

Motor protection

PTC

KTY 83-110

KTY 84-130

Approval

UL/CSA approval: cURus

CCC

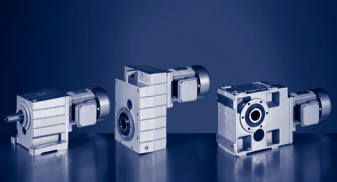
China Energy Label

Further options

Protection cover

2nd shaft end

2nd nameplate (adhesive nameplate/metal nameplate)



# General information

## Notes on the selection tables

The selection tables shown the available combinations of gearbox type, number of stages, ratio and motor. The following legend indicates the structure of the selection tables.

1

- Gearbox type
  - Helical gearbox GST
  - Shaft-mounted GFL
  - Bevel gearbox GKR
  - Helical-bevel gearbox GKS
  - Helical-worm gearbox GSS
- MF□MA : frequency inverter optimised



Rated power  $P_N$  of the drive motor in relation to the rated frequency

→ 120 Hz:  $P_N = 0.55 \text{ kW}$

Adjusting range

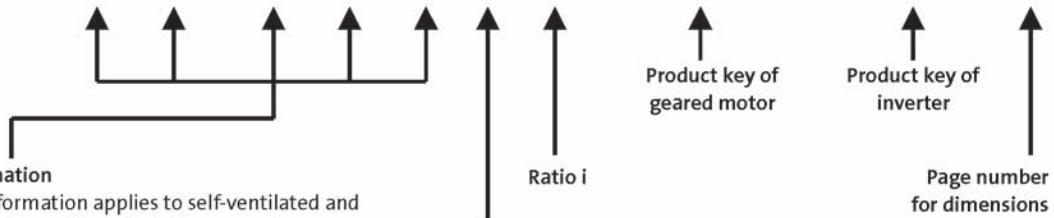
→  $n_{22} / n_2 = 1 \dots 24.0$

Speed range of the drive motor

→  $n_1 = 143.3 \dots 3440 \text{ r/min}$



| $n_{22}$ | $n_{21}$ | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$ |        |                    |                   |     |
|----------|----------|---------|----------|-------|-----|-----|--------|--------------------|-------------------|-----|
| [r/min]  | [r/min]  | [r/min] | [Nm]     | [Nm]  |     |     |        |                    |                   |     |
| 4.5      | 19       | -       | 109      | 35    | 47  | 1.3 | 31.600 | GST04-2M□□□□063C32 | E84AV□□□□5514□□□□ | 116 |
| 4.4      | 19       | -       | 107      | 36    | 48  | 3.0 | 32.267 | GST05-2M□□□□063C32 | E84AV□□□□5514□□□□ | 116 |
| 4.0      | 17       | -       | 96       | 40    | 53  | 1.0 | 35.909 | GST04-2M□□□□063C32 | E84AV□□□□5514□□□□ | 116 |



### Speed and torque information

The speed and torque information applies to self-ventilated and forced-ventilated drives. Externally cooled drives can always output the torque  $M_2$  in all the setting ranges. In the case of self-ventilated drives, a reduction to  $M_{22}$  is necessary in the lower speed range.



The following applies to self-ventilated geared motors:  $n_{22}$  is the minimum speed at which the torque  $M_{22}$  is permissible. From  $n_{21}$  to  $n_2$ , the maximum torque is  $M_2$ . The following applies to forced-ventilated geared motors: From the minimum speed  $n_{22}$  to  $n_2$ , the maximum torque is  $M_2$ .

The load capacity  $c$  of the gearbox  $c$  is the ratio of the gearbox's rated torque to the rated torque of the three-phase motor (calculated in respect of its application to the output shaft).  $c$  must always be greater than the application factor  $k$  determined for the application.

$$c = \frac{M_{2,zul}}{M_{1N} \cdot i \cdot \eta_{Getr}} > k$$





### Thermal power limit

The thermal power limit, defined by the heat balance, limits the permissible gearbox continuous power. It may be less than the mechanical power ratings listed in the selection tables.

The thermal power limit is affected by:

- ▶ The churning losses in the lubricant. These are determined by the mounting position and the circumferential speed of the wheels
- ▶ The load and the speed
- ▶ The ambient conditions: temperature, air circulation, input or dissipation via shafts and the foundation

Please consult your Lenze subsidiary

- ▶ if the following input speeds  $n_1$  are exceeded on a continuous basis (continuous is defined as more than 8 h/day):

| Motor frame size | Mounting position A, B, E, F | Mounting position C, D |
|------------------|------------------------------|------------------------|
| 063 ... 100      | 3000 r/min                   | 3000 r/min             |
| 112 ... 132      | 3000 r/min                   | 1500 r/min             |

- ▶ if the following input speeds  $n_1$  are exceeded:

| Motor frame size | Mounting position A, B, E, F | Mounting position C, D |
|------------------|------------------------------|------------------------|
| 063 ... 100      | 4000 r/min                   | 3000 r/min             |
| 112 ... 132      | 4000 r/min                   | 2000 r/min             |

- ▶ or if you are using the following gearbox type, size and ratio combinations at an input speed of  $n_1 > 1500$  r/min:

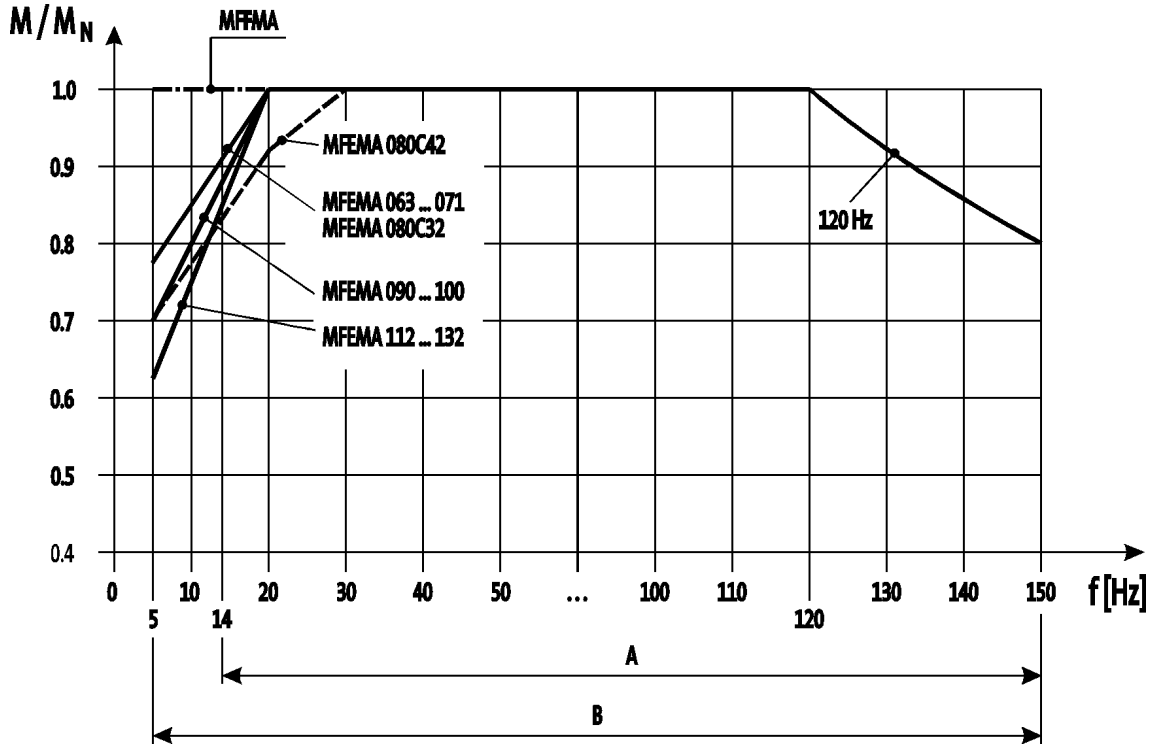
| Gearbox type                      | Gearbox size   | Ratio $i$ |
|-----------------------------------|----------------|-----------|
| GST helical gearbox               | 07, 09, 11, 14 | $\leq 15$ |
| GFL shaft-mounted helical gearbox | 07, 09, 11, 14 | $\leq 25$ |
| GKS helical-bevel gearbox         | 07, 09, 11, 14 | $\leq 40$ |

### Possible ways of extending the application area

- ▶ Synthetic lubricant (option)
- ▶ Shaft sealing rings made from FP material/Viton (option)
- ▶ Reduction in lubricant quantity
- ▶ Cooling of the geared motor by means of air convection on the machine/system

### Torque derating at low motor frequencies

Torque reduction depending on motor frame size taking into account the thermal behaviour when operated with a frequency inverter.



A = Operation with integral fan and brake  
 B = Operation with integral fan and brake control "Holding current reduction"

- The technical data listed in this catalogue for motors in inverter operation applies for operation on a Lenze frequency inverter. If you are in any doubt, please ask the manufacturer of the frequency inverter whether the drive is able to operate the motor with the technical data listed (e.g. setting range, base frequency).

**You can use the Drive Solution Designer for precise drive dimensioning.**

The Drive Solution Designer helps you to carry out a fast and high-quality drive dimensioning. The software includes well-founded and proven knowledge on drive applications and electro-mechanical drive components.

Please contact your Lenze sales office.



### General data

| Gearbox type                       | GST   | GFL | GKR  | GKS | GSS |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
|------------------------------------|---|-----|--|-----|-----|------------------------------------|------|------|------|-----------------------------|-----------------------------|------------------------------------|--|------|--|------|--|------------------------------------|--|--|------|--|------|------------------------------------|--|--|--|--|------|-------|--|--|--|--|--|
| <b>Housing</b>                     | Cuboid<br>Aluminium / cast iron   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| Design                             |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| Material                           |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| <b>Solid shaft</b>                 | with keyway to DIN 6885<br>k6 (d ≤ 50 mm)<br>m6 (d > 50 mm)<br>Tempering steel C45 or 42CrMo4   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| Design                             |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| Tolerance                          |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| Material                           |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| <b>Hollow shaft</b>                | H: with keyway<br>S: smooth<br>Bore H7<br>Tempering steel C45   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| Design                             |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| Tolerance                          |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| Material                           |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| <b>Toothed parts</b>               | Optimised tooth flanks and profile geometry<br>Ground tooth flanks  |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| Design                             |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| Material                           | Case-hardened steel   |     | Case-hardened steel, bronze (worm gear only) |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| <b>Shaft-hub joint</b>             | 1st stage/prestage/helical (bevel) gearbox: Friction-type connection<br>Output stage (= 2nd, 3rd or 4th stage): Friction-type or positive-fit connection  |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| <b>Shaft sealing rings</b>         | With dust lip<br>NB / FP  |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| Design                             |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| Material                           |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| <b>Bearing</b>                     | Ball bearing / tapered-roller bearing depending on size and design  |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| Design                             |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| <b>Lubricants</b>                  | DIN 51502<br>corresponding to mounting position (see operating instructions)  |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| Standard                           |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| Quantities                         |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| <b>Mechanical efficiency</b>       | <table border="1"> <tr> <td>1-stage gearboxes [<math>\eta_{c=1}</math>]</td> <td>0.98</td> <td></td> <td></td> <td></td> <td>0.62 ... 0.92<sup>1)</sup></td> </tr> <tr> <td>2-stage gearboxes [<math>\eta_{c=1}</math>]</td> <td></td> <td>0.97</td> <td></td> <td>0.96</td> <td></td> </tr> <tr> <td>3-stage gearboxes [<math>\eta_{c=1}</math>]</td> <td></td> <td></td> <td>0.95</td> <td></td> <td>0.95</td> </tr> <tr> <td>4-stage gearboxes [<math>\eta_{c=1}</math>]</td> <td></td> <td></td> <td></td> <td></td> <td>0.93</td> </tr> <tr> <td>Notes</td> <td colspan="5"> <ul style="list-style-type: none"> <li>▶ Dependent on transmission ratio</li> <li>▶ Housing at operating temperature and teeth run in</li> </ul> </td> </tr> </table> |     |  |     |     | 1-stage gearboxes [ $\eta_{c=1}$ ] | 0.98 |      |      |                             | 0.62 ... 0.92 <sup>1)</sup> | 2-stage gearboxes [ $\eta_{c=1}$ ] |  | 0.97 |  | 0.96 |  | 3-stage gearboxes [ $\eta_{c=1}$ ] |  |  | 0.95 |  | 0.95 | 4-stage gearboxes [ $\eta_{c=1}$ ] |  |  |  |  | 0.93 | Notes | <ul style="list-style-type: none"> <li>▶ Dependent on transmission ratio</li> <li>▶ Housing at operating temperature and teeth run in</li> </ul> |  |  |  |  |
| 1-stage gearboxes [ $\eta_{c=1}$ ] |   |     |  |     |     | 0.98                               |      |      |      | 0.62 ... 0.92 <sup>1)</sup> |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| 2-stage gearboxes [ $\eta_{c=1}$ ] |   |     |  |     |     |                                    | 0.97 |      | 0.96 |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| 3-stage gearboxes [ $\eta_{c=1}$ ] |   |     |  |     |     |                                    |      | 0.95 |      | 0.95                        |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| 4-stage gearboxes [ $\eta_{c=1}$ ] |   |     |  |     |     |                                    |      |      |      | 0.93                        |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| Notes                              | <ul style="list-style-type: none"> <li>▶ Dependent on transmission ratio</li> <li>▶ Housing at operating temperature and teeth run in</li> </ul>  |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| 1-stage gearboxes [ $\eta_{c=1}$ ] |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| 2-stage gearboxes [ $\eta_{c=1}$ ] |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| 3-stage gearboxes [ $\eta_{c=1}$ ] |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| 4-stage gearboxes [ $\eta_{c=1}$ ] |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |
| Notes                              |   |     |  |     |     |                                    |      |      |      |                             |                             |                                    |  |      |  |      |  |                                    |  |  |      |  |      |                                    |  |  |  |  |      |       |  |  |  |  |  |

<sup>1)</sup> → 322 - Efficiencies depending on ratio

## Ventilation

### Gearboxes without ventilation

No ventilation measures are required for the following gearboxes:

- ▶ GST03 / 04
- ▶ GFL04
- ▶ GKR03...05
- ▶ GKS04
- ▶ GSS04

### Gearboxes that may optionally be equipped with ventilation

Special measures are not usually required when using these gearboxes. In borderline cases, e.g. at input speeds > 2000 r/min, we recommend the use of breather elements which we can supply if required.

- ▶ GST05
- ▶ GFL05
- ▶ GKS05

### Gearboxes with ventilation

The following gearboxes are supplied with breather elements as standard:

- ▶ GST06...14
- ▶ GFL06...14
- ▶ GKR06
- ▶ GKS06...14
- ▶ GSS05...07

### Special measures for mounting position C (motor on top)

We recommend that an oil compensation reservoir is always used with gearbox sizes G□□09...14 in this mounting position. This reservoir can be purchased as an option. For illustrations and measures according to gearbox type see under Ventilation G□□ [⊗].

It is not required at higher ratios or low input speeds. Please contact Lenze in this event.



### Lubricants

Lenze gearboxes and geared motors are ready for operation on delivery and are filled with lubricants that are specific to both the drive and the design. The mounting position and design specified in the order are decisive factors in choosing the volume of lubricant.

The lubricants listed in the lubricant table are approved for use in Lenze drives.

#### Lubricant table

|                          |   |   |   |   |
|--------------------------|---|---|---|---|
| Designation              | CLP 460   | CLP PG 460  | CLP HC 320  | CLP HC 220<br>USDA H1   |
| Gearbox type             | GST / GFL / GKR / GKS   | GSS   | GST / GFL / GKR / GKS   | GST / GFL / GKR / GKS /<br>GSS  |
| Ambient temperature [°C] | 0 ... +40   | -20 ... +40   | -25 ... +50   | -20 ... +40   |
| Specification            | Mineral based oil with additives  | Synthetic-based oil (polyglycol)  | Synthetic-based oil (synthetic hydrocarbon / poly-alpha-olefin oil) |   |
| Note                     |   | Cannot be mixed with other oil types.   |   | For food processing industry  |
| Changing interval        | 16000 operating hours not later than after three years (oil temperature 70...80 °C) | 25000 operating hours not later than after three years (oil temperature 70...80 °C) |   | 16000 operating hours not later than after three years (oil temperature 70...80 °C) |
| Fuchs                    | Fuchs Renolin CLP 460   |   | Fuchs Renolin Unisyn CLP 320  | bremer & leguil Cassida Fluid GL 220  |
| Klüber                   | Klüberoil GEM1-460 N  | Klübersynth GH 6-460  | Klübersynth GEM4-320 N  | Klüberoil 4 UH1-220 N   |
| Shell                    | Shell Omala 460   | Shell Tivela S 460  | Shell Omala Oil HD 320  |   |

- ▶ Please contact your Lenze office if you are operating in areas with < -20 °C bzw. >ambient temperatures +40°C.
- ▶ Caution: when using the lubricant CLP HC 220 on the GSS helical-worm gearbox, the torque  $M_2$  must be reduced to 80 % of the values stated in the catalogue!



### Surface and corrosion protection

For optimum protection of geared motors against ambient conditions, the surface and corrosion protection system (OKS) offers tailor-made solutions.

Various surface coatings combined with other protective measures ensure that the geared motors operate reliably even at high air humidity, in outdoor installation or in the presence of atmospheric impurities. Any colour from the RAL Classic collection can be chosen for the top coat. The geared motors are also available unpainted (no surface and corrosion protection).

#### OKS-G (primed)

##### Applications

- ▶ Dependent on subsequent top coat applied

##### Measures

- ▶ 1K primer (grey)
- ▶ Screws zinc-coated
- ▶ Stainless breather elements

##### Optional measures

- ▶ Stainless steel rating plate

#### OKS-S

##### Applications

- ▶ Standard applications
- ▶ Indoor installation in heated buildings
- ▶ Air humidity up to 90%

##### Measures

- ▶ Surface coating in accordance with corrosivity category C1 (in accordance with EN 12944-2)
- ▶ Screws zinc-coated
- ▶ Stainless breather elements

##### Optional measures

- ▶ Stainless steel rating plate

#### OKS-M

##### Applications

- ▶ Indoor installation in unheated buildings
- ▶ Outdoor installation in covered, protected area
- ▶ Air humidity up to 95 %

##### Measures

- ▶ Surface coating in accordance with corrosivity category C2 (in accordance with EN 12944-2)
- ▶ Screws zinc-coated
- ▶ Stainless breather elements

##### Optional measures

- ▶ Stainless steel shaft
- ▶ Stainless steel rating plate
- ▶ Rust-free shrink disc (on request)



### OKS-L

#### Applications

- ▶ Outdoor installation
- ▶ Air humidity over 95%
- ▶ Chemical industrial plants
- ▶ Food industry

#### Measures

- ▶ Surface coating in accordance with corrosivity category C3 (in accordance with EN 12944-2)
- ▶ Fan cover and B end shield additionally primed
- ▶ Cable glands with gaskets
- ▶ Corrosion-resistant brake with cover ring, stainless friction plate, and chrome-plated armature plate (on request)
- ▶ All screws/screw plugs zinc-coated
- ▶ Stainless breather elements
- ▶ Threaded holes that are not used are closed by means of plastic plugs

#### Optional measures

- ▶ Sealed recesses on motor (on request)
- ▶ Stainless steel shaft
- ▶ Stainless steel rating plate
- ▶ Rust-free shrink disc (on request)
- ▶ Additional priming coat on cast iron fan
- ▶ Oil expansion tank and torque plates painted separately and supplied loose

A blower cannot be used in combination with OKS-L.

#### Structure of surface coating

| Surface and corrosion protection system              | Without | OKS-G | OKS-S  | OKS-M | OKS-L |
|--|---------|-------|--|-------|-------|
| Corrosivity category according to DIN EN ISO 12944-2 |         |       | C1   | C2    | C3    |
| Structure of the surface coating                     |         |       |  |       |       |
| Dipping primer                                       |         |       |  |       |       |
| 1K primer  |         |       |  |       |       |
| 2K-EP primer   |         |       |  |       |       |
| 2K-PUR top coat                                      |         |       |  |       |       |
| Colour   |         | Grey  | Standard: RAL 7012<br>Optional: According to RAL Classic |       |       |

- ▶ The gearboxes GST 03 and GKR 03 ... 06 have an aluminium housing, therefore a dipping primer is dispensed with in the case of these gearboxes.



## Drive dimensioning

### Three-phase AC motor versions

#### Standards and operating conditions

|   |               |            |                                    |
|---|---------------|------------|------------------------------------|
| <b>Enclosure</b><br>EN 60529                              |               |            | IP55                               |
| <b>Approval</b><br>Class                                  |               |            | CCC<br>cURus<br>GOST-R<br>UkrSepro |
| <b>Temperature class</b><br>IEC/EN 60034-1; utilisation   |               |            | B                                  |
| IEC/EN 60034-1; insulation system (enamel-insulated wire) |               |            | F                                  |
| <b>Min. ambient operating temperature</b>                 | $T_{opr,min}$ | [°C]       | -20                                |
| <b>Max. ambient operating temperature</b>                 | $T_{opr,max}$ | [°C]       | 40.0                               |
| With power reduction                                      | $T_{opr,max}$ | [°C]       | 60                                 |
| <b>Site altitude</b><br>Amsl                              | $H_{max}$     | [m]        | 4000                               |
| power reduction above 1000 m                              |               | [%/1000 m] | 5.00                               |





### Options

|                                    | MF□□□□□063-32<br>MF□□□□□063-42  | MF□□□□□071-32<br>MF□□□□□071-42    |
|------------------------------------|---|-----------------------------------|
| <b>Cooling type</b>                | Integral fan<br>Separate fan  |                                   |
| <b>Spring-applied brake Design</b> | Standard or LongLife design<br>Reduced or standard braking torque<br>With rectifier<br>With manual release lever<br>Low noise |                                   |
| <b>Feedback Design</b>             | Resolver<br>Incremental encoder<br>Absolute value encoder (multi-turn)  |                                   |
| <b>Thermal sensor</b>              |   |                                   |
| Thermal contact                    | TKO   |                                   |
| Thermal detector                   | KTY83-110<br>KTY84-130  |                                   |
| PTC thermistor                     | PTC   |                                   |
| <b>Motor connection</b>            |   |                                   |
| Power connection                   | Terminal box<br>Connector ICN   |                                   |
| Brake connection                   | Terminal box<br>HAN modular connector<br>HAN10E connector<br>Connector ICN  |                                   |
| Blower connection                  | Terminal box<br>Connector ICN   |                                   |
| Feedback connection                | Terminal box<br>Connector ICN   |                                   |
| Temperature sensor connection      | Terminal box<br>KTY at connector in the feedback connection<br>TKO or PTC at connector in the power connection                |                                   |
| <b>Shaft bearings</b>              |   |                                   |
| Position of the locating bearing   | Non-drive end   |                                   |
| Bearing type                       | Deep-groove ball bearing with high-temperature resistant grease, 2 sealing discs or cover plates                              |                                   |
| <b>Colour</b>                      | Primed<br>Paint in various corrosion-protection designs in accordance with RAL colours<br>Not coated                          |                                   |
| <b>Further options</b>             | Protection cover  | Protection cover<br>2nd shaft end |

## Drive dimensioning

### Three-phase AC motor versions

|                                    | MF□□□□□080-32<br>MF□□□□□080-42   | MF□□□□□090-32 | MF□□□□□100-12<br>MF□□□□□100-32 |
|------------------------------------|--|---------------|--------------------------------|
| <b>Cooling type</b>                | Integral fan<br>Separate fan   |               |                                |
| <b>Spring-applied brake Design</b> | Standard or LongLife design<br>Reduced, standard or increased braking torque<br>With rectifier<br>With manual release lever<br>Low noise |               |                                |
| <b>Feedback Design</b>             | Resolver<br>Incremental encoder<br>Absolute value encoder (multi-turn)   |               |                                |
| <b>Thermal sensor</b>              |  |               |                                |
| Thermal contact                    | TKO  |               |                                |
| Thermal detector                   | KTY83-110<br>KTY84-130   |               |                                |
| PTC thermistor                     | PTC  |               |                                |
| <b>Motor connection</b>            |  |               |                                |
| Power connection                   | Terminal box<br>HAN modular connector<br>HAN10E connector<br>Connector ICN   |               |                                |
| Brake connection                   | Terminal box<br>HAN modular connector<br>HAN10E connector<br>Connector ICN   |               |                                |
| Blower connection                  | Terminal box<br>Connector ICN  |               |                                |
| Feedback connection                | Terminal box<br>Connector ICN  |               |                                |
| Temperature sensor connection      | Terminal box<br>KTY at connector in the feedback connection<br>TKO or PTC at connector in the power connection                           |               |                                |
| <b>Shaft bearings</b>              |  |               |                                |
| Position of the locating bearing   | Non-drive end  |               |                                |
| Bearing type                       | Deep-groove ball bearing with high-temperature resistant grease, 2 sealing discs or cover plates   |               |                                |
| <b>Colour</b>                      | Primed<br>Paint in various corrosion-protection designs in accordance with RAL colours<br>Not coated                                     |               |                                |
| <b>Further options</b>             | Protection cover<br>2nd shaft end  |               |                                |

# Drive dimensioning

## Three-phase AC motor versions



2

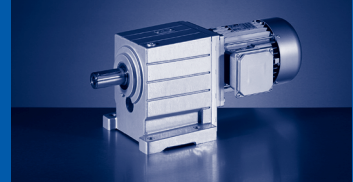
|                                    | MF□□□□□112-22  | MF□□□□□132-12<br>MF□□□□□132-22<br>MF□□□□□132-32 |
|------------------------------------|--|---|
| <b>Cooling type</b>                | Integral fan<br>Separate fan   |   |
| <b>Spring-applied brake Design</b> | Standard design<br>Reduced, standard or increased braking torque<br>With rectifier<br>With manual release lever<br>Low noise |   |
| <b>Feedback Design</b>             | Resolver<br>Incremental encoder<br>Absolute value encoder (multi-turn)   |   |
| <b>Thermal sensor</b>              | TKO  |   |
| Thermal contact                    | KTY83-110  |   |
| Thermal detector                   | KTY84-130  |   |
| PTC thermistor                     | PTC  |   |
| <b>Motor connection</b>            | Terminal box   |   |
| Power connection                   | Terminal box   | Terminal box<br>HAN modular connector           |
| Brake connection                   | Terminal box   | Terminal box<br>HAN modular connector           |
| Blower connection                  | Terminal box<br>Connector ICN  |   |
| Feedback connection                | Terminal box<br>Connector ICN  |   |
| Temperature sensor connection      | Terminal box<br>KTY at connector in the feedback connection  |   |
| <b>Shaft bearings</b>              | Non-drive end  |   |
| Position of the locating bearing   | Non-drive end  |   |
| Bearing type                       | Deep-groove ball bearing with high-temperature resistant grease, 2 sealing discs or cover plates                             |   |
| <b>Colour</b>                      | Primed<br>Paint in various corrosion-protection designs in accordance with RAL colours<br>Not coated                         |   |
| <b>Further options</b>             | Protection cover<br>2nd shaft end  |   |



## Drive dimensioning

Three-phase AC motor versions

2



### Permissible radial and axial forces at output

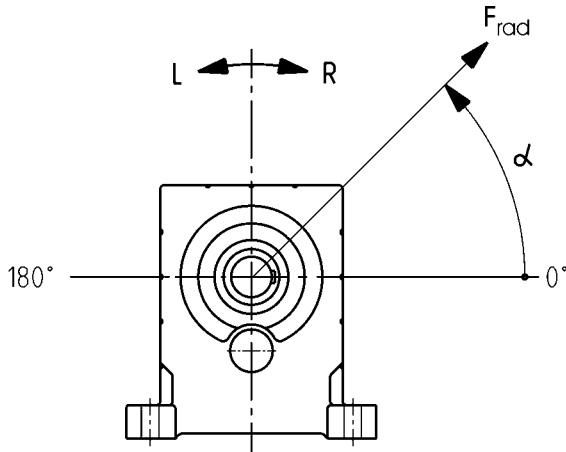
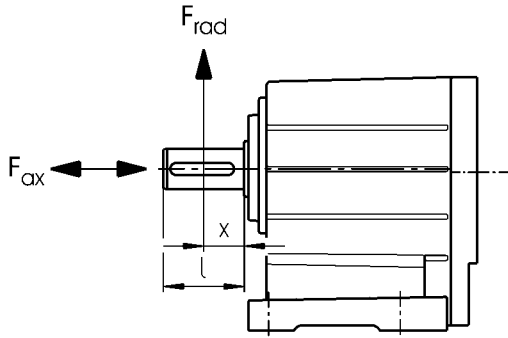
#### Permissible radial force

$$F_{rad,per} = \min(f_w \times f_\alpha \times F_{rad,max} ; f_w \times F_{rad,max} \text{ at } n_2 \leq 50 \text{ r/min})$$

#### Permissible axial force

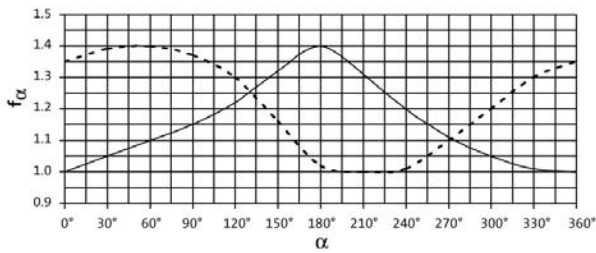
$$F_{ax,per} = F_{ax,max} \text{ if } F_{rad} = 0$$

If  $F_{rad}$  and  $F_{ax} \neq 0$ , please contact Lenze.

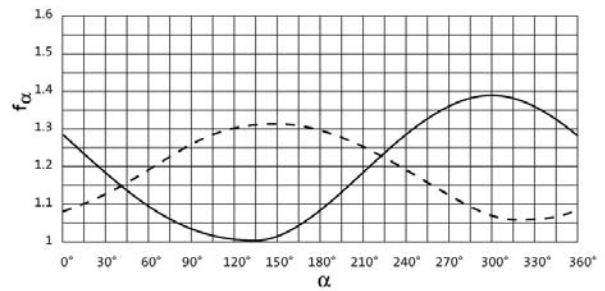


### Effective direction factor $f_\alpha$ at output shaft

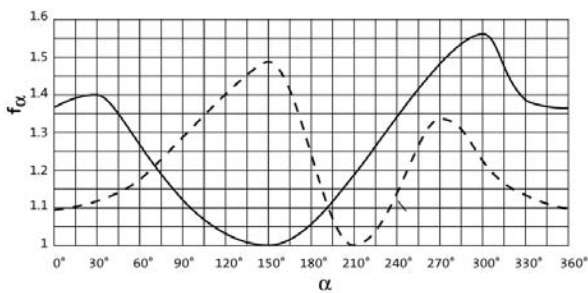
GST03-2



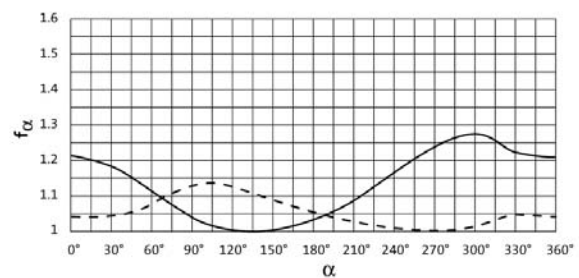
GST04...09-1



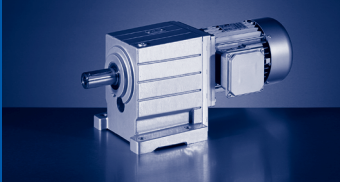
GST04...09-2, 3



GST11...14-2, 3



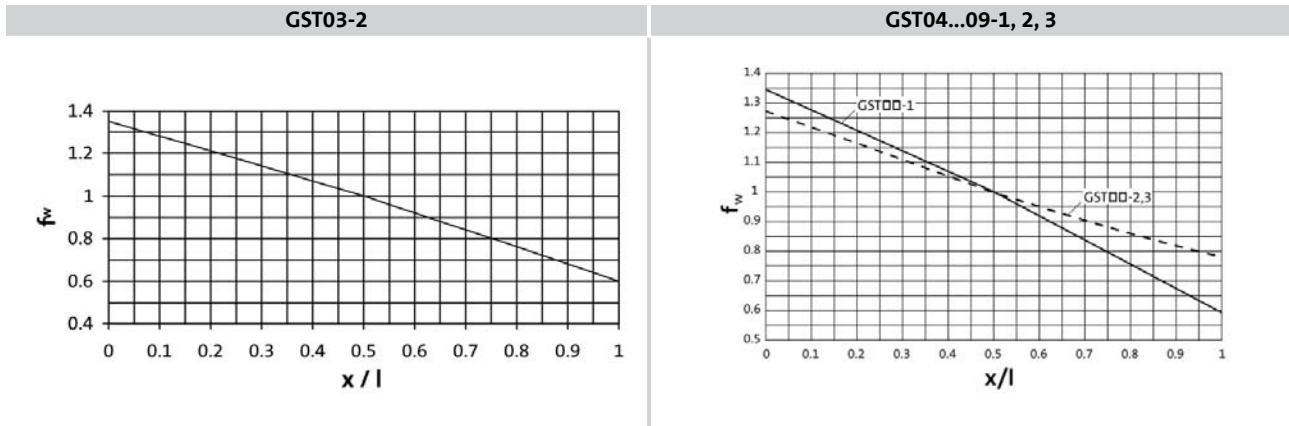
- Direction of rotation R
- - - Direction of rotation L



# GST

GST [N] - forces

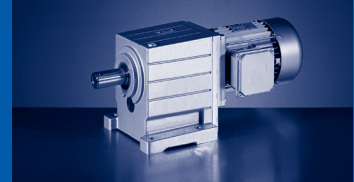
## Additional load factor $f_w$ at output shaft



### GST□□-1

| Size                                  | $n_2$ [r/min] |               |               |               |               |               |               |               |               |
|---------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Gearbox                               | 2500          | 1600          | 1000          | 600           | 400           | 200           | 125           | 80            | ≤50           |
| <b>Max. radial force, Solid shaft</b> |               |               |               |               |               |               |               |               |               |
|                                       | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ |
|                                       | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           |
| <b>GST04</b>                          | 100           | 180           | 440           | 600           | 850           | 1050          | 1050          | 1050          | 1050          |
| <b>GST05</b>                          | 100           | 250           | 550           | 750           | 1400          | 2000          | 2300          | 2300          | 2300          |
| <b>GST06</b>                          | 200           | 600           | 800           | 800           | 1100          | 2200          | 2900          | 3500          | 3500          |
| <b>GST07</b>                          | 700           | 1000          | 1200          | 1300          | 1900          | 3000          | 3900          | 4700          | 5300          |
| <b>GST09</b>                          | 1750          | 2200          | 2500          | 2500          | 3500          | 6200          | 7900          | 9000          | 9500          |
| <b>Max. axial force, Solid shaft</b>  |               |               |               |               |               |               |               |               |               |
|                                       | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  |
|                                       | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           |
| <b>GST04</b>                          | 600           | 800           | 1000          | 1300          | 1400          | 1400          | 1400          | 1400          | 1400          |
| <b>GST05</b>                          | 800           | 1100          | 1400          | 2000          | 2000          | 2000          | 2000          | 2000          | 2000          |
| <b>GST06</b>                          | 900           | 1200          | 1500          | 2000          | 2500          | 2500          | 2500          | 2500          | 2500          |
| <b>GST07</b>                          | 1200          | 1600          | 2000          | 2700          | 3300          | 3700          | 3700          | 3700          | 3700          |
| <b>GST09</b>                          | 2500          | 3400          | 4300          | 5700          | 6800          | 7000          | 7000          | 7000          | 7000          |

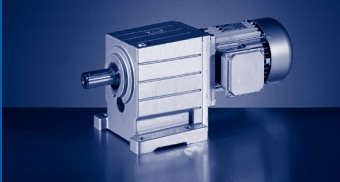
- ▶ Application of force  $F_{rad}$ : centre of shaft journal ( $x = l/2$ )
- ▶  $F_{ax,max}$  only valid with  $F_{rad} = 0$



**GST□□-2 / 3 with standard bearings**

| Size                                  | $n_2$ [r/min] |               |               |               |               |               |               |               |               |               |
|---------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                                       | 1000          | 630           | 400           | 250           | 160           | 100           | 63            | 40            | 25            | ≤16           |
| <b>Max. radial force, Solid shaft</b> |               |               |               |               |               |               |               |               |               |               |
|                                       | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ |
|                                       | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           |
| <b>GST03</b>                          | 100           | 300           | 630           | 710           | 800           | 920           | 1100          | 1400          | 1500          | 1500          |
| <b>GST04</b>                          | 730           | 950           | 1250          | 1450          | 1700          | 2100          | 2500          | 2650          | 2650          | 2650          |
| <b>GST05</b>                          | 1150          | 1500          | 1950          | 2200          | 2600          | 3000          | 3500          | 3800          | 3900          | 3900          |
| <b>GST06</b>                          | 140           | 750           | 2350          | 2600          | 3100          | 3600          | 4300          | 4350          | 4350          | 4350          |
| <b>GST07</b>                          | 140           | 2050          | 3400          | 3800          | 4500          | 5400          | 6400          | 7600          | 9100          | 9500          |
| <b>GST09</b>                          | 1500          | 1950          | 6800          | 7600          | 9400          | 11500         | 11500         | 11500         | 11500         | 11500         |
| <b>GST11</b>                          | 11500         | 14400         | 17000         | 19000         | 21000         | 21000         | 21000         | 21000         | 21000         | 21000         |
| <b>GST14</b>                          | 16600         | 20700         | 24000         | 27000         | 31000         | 36000         | 39000         | 40000         | 40000         | 40000         |
| <b>Max. axial force, Solid shaft</b>  |               |               |               |               |               |               |               |               |               |               |
|                                       | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  |
|                                       | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           |
| <b>GST03</b>                          | 300           | 400           | 600           | 700           | 800           | 900           | 1000          | 1000          | 1000          | 1000          |
| <b>GST04</b>                          | 600           | 800           | 1100          | 1300          | 1650          | 2000          | 2000          | 2000          | 2000          | 2000          |
| <b>GST05</b>                          | 1200          | 1600          | 2000          | 2300          | 2650          | 3100          | 3600          | 3600          | 3600          | 3600          |
| <b>GST06</b>                          | 500           | 600           | 850           | 900           | 1250          | 1800          | 2600          | 3600          | 4800          | 4800          |
| <b>GST07</b>                          | 1100          | 1500          | 1900          | 2200          | 2900          | 3900          | 5300          | 7000          | 7000          | 7000          |
| <b>GST09</b>                          | 1300          | 1800          | 2300          | 2800          | 4000          | 5600          | 8100          | 11000         | 12000         | 12000         |
| <b>GST11</b>                          | 5700          | 7600          | 9500          | 10000         | 11000         | 14000         | 16000         | 16000         | 16000         | 16000         |
| <b>GST14</b>                          | 9000          | 12000         | 15000         | 16000         | 18000         | 20000         | 20000         | 20000         | 20000         | 20000         |

- ▶ Application of force  $F_{rad}$ : centre of shaft journal ( $x = l/2$ )
- ▶  $F_{ax,max}$  only valid with  $F_{rad} = 0$



## GST

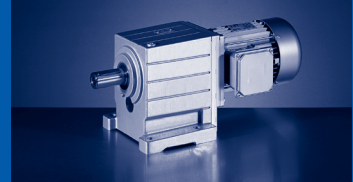
### GST [N] - forces

#### GST□□-2 / 3 with reinforced bearing

| Size  | n <sub>2</sub> [r/min] |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|---|------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Gearbox   | 1000                   | 630                  | 400                  | 250                  | 160                  | 100                  | 63                   | 40                   | 25                   | ≤16                  |
| <b>Max. radial force, Solid shaft (reinforced bearings)</b> |                        |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|   | F <sub>rad,max</sub>   | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> |
|   | [N]                    | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  |
| <b>GST04</b>  | 1900                   | 2350                 | 2850                 | 3150                 | 3550                 | 3750                 | 3750                 | 3750                 | 3750                 | 3750                 |
| <b>GST05</b>  | 3350                   | 3950                 | 4900                 | 5400                 | 5400                 | 5400                 | 5400                 | 5400                 | 5400                 | 5400                 |
| <b>GST06</b>  | 4250                   | 5100                 | 6300                 | 7000                 | 7700                 | 7700                 | 7700                 | 7700                 | 7700                 | 7700                 |
| <b>GST07</b>  | 5650                   | 6850                 | 8500                 | 9500                 | 10500                | 12500                | 13000                | 13000                | 13000                | 13000                |
| <b>GST09</b>  | 11300                  | 14000                | 16500                | 17000                | 17000                | 17000                | 17000                | 17000                | 17000                | 17000                |
| <b>Max. axial force, Solid shaft (reinforced bearings)</b>  |                        |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|   | F <sub>ax,max</sub>    | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  |
|   | [N]                    | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  |
| <b>GST04</b>  | 1000                   | 1300                 | 1700                 | 1900                 | 2200                 | 2500                 | 2500                 | 2500                 | 2500                 | 2500                 |
| <b>GST05</b>  | 2100                   | 2800                 | 3600                 | 3900                 | 4300                 | 4500                 | 4500                 | 4500                 | 4500                 | 4500                 |
| <b>GST06</b>  | 2100                   | 2800                 | 3500                 | 3600                 | 4200                 | 4900                 | 5700                 | 5700                 | 5700                 | 5700                 |
| <b>GST07</b>  | 3300                   | 4400                 | 5500                 | 6100                 | 7100                 | 8300                 | 9000                 | 9000                 | 9000                 | 9000                 |
| <b>GST09</b>  | 4800                   | 6400                 | 8000                 | 9000                 | 10500                | 12500                | 14000                | 14000                | 14000                | 14000                |

- ▶ Application of force F<sub>rad</sub>: centre of shaft journal ( $x = l/2$ )
- ▶ F<sub>ax,max</sub> only valid with F<sub>rad</sub> = 0

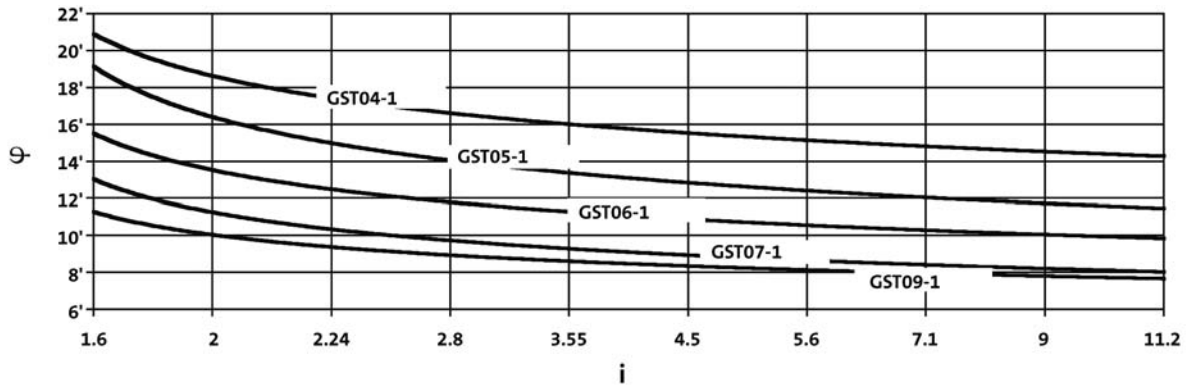




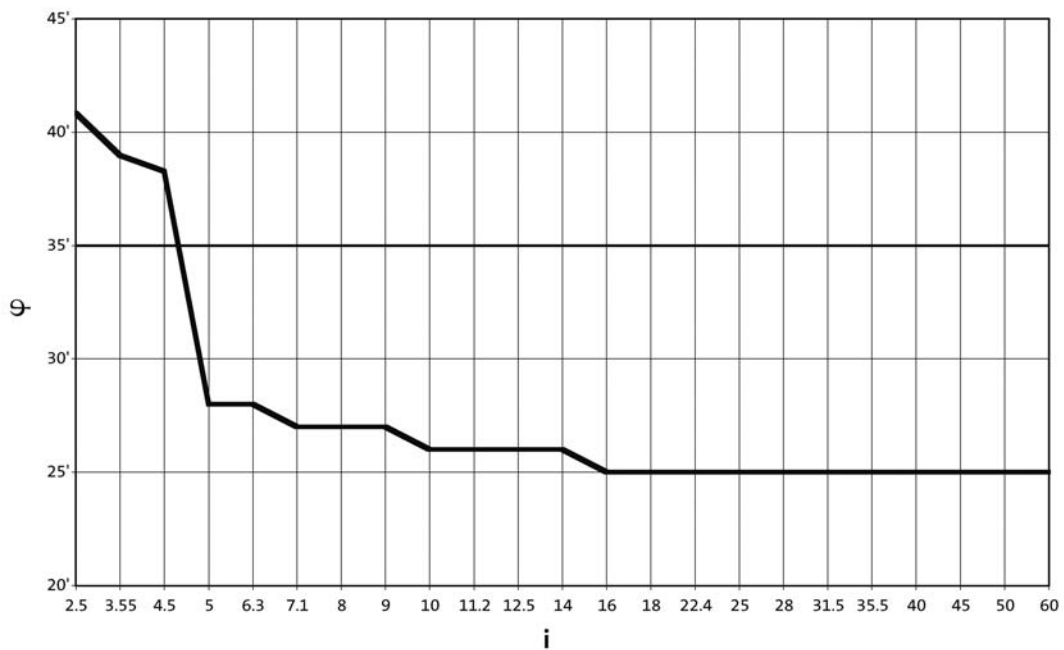
## Output backlash in angular minutes

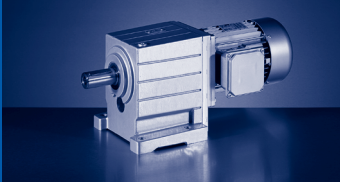
- ▶ Backlash  $\varphi$  depending on ratio  $i$

GST04...09-1



GST03-2



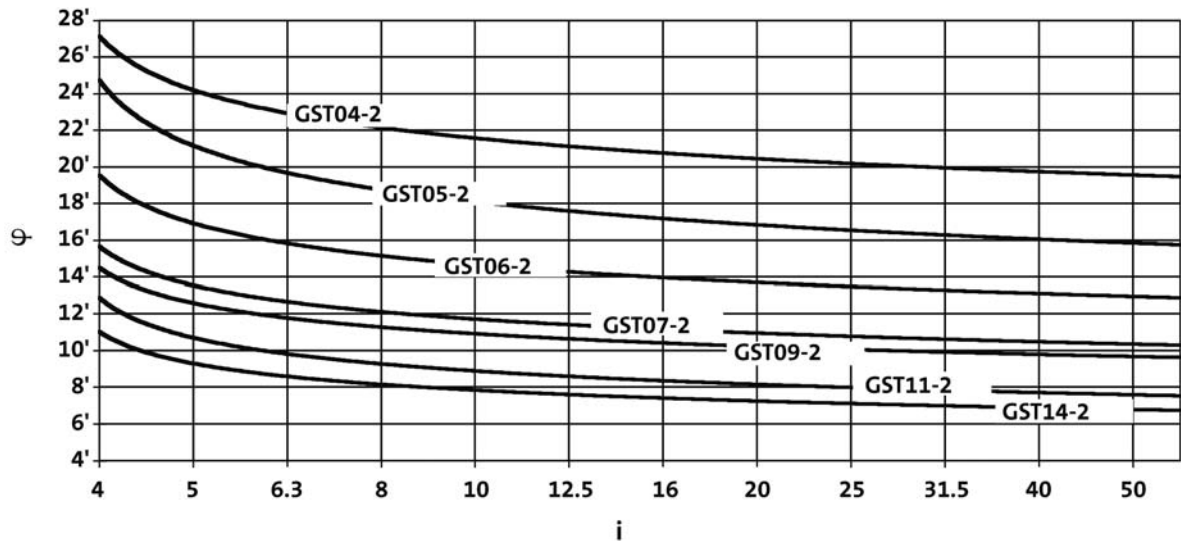


# GST

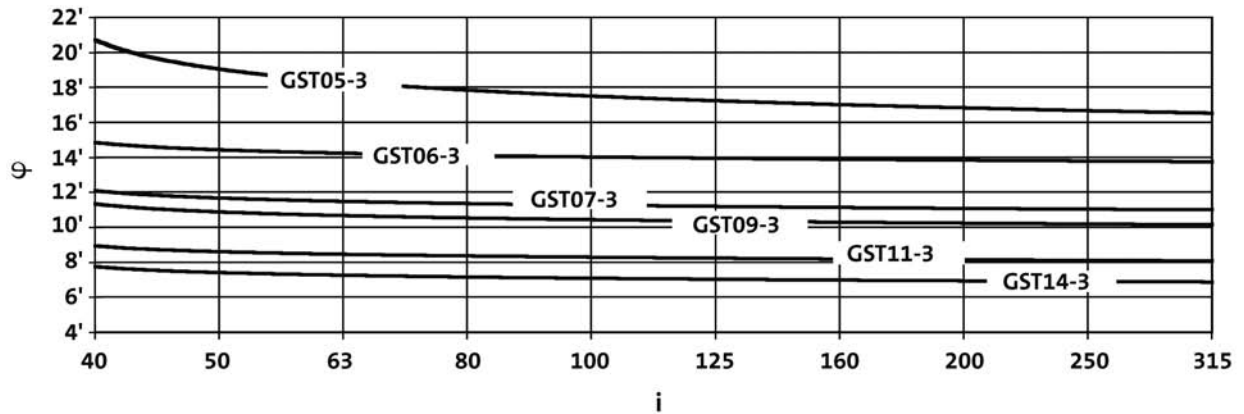
GST [ ' ] - backlash

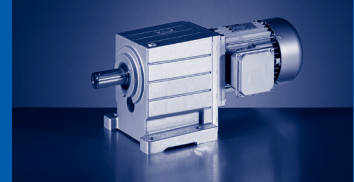
► Backlash  $\varphi$  depending on ratio  $i$

GST04...14-2



GST05...14-3





## GST□□-1

- ▶ Moment of inertia (J) depending on ratio i

| Gearbox |   |                      | GST04 |
|---------|---|----------------------|-------|
| 1.600   | J | [kgcm <sup>2</sup> ] | 0.267 |
| 2.048   | J | [kgcm <sup>2</sup> ] | 0.194 |
| 2.240   | J | [kgcm <sup>2</sup> ] | 0.172 |
| 2.857   | J | [kgcm <sup>2</sup> ] | 0.126 |
| 3.500   | J | [kgcm <sup>2</sup> ] | 0.099 |
| 4.400   | J | [kgcm <sup>2</sup> ] | 0.067 |
| 5.667   | J | [kgcm <sup>2</sup> ] | 0.047 |
| 7.182   | J | [kgcm <sup>2</sup> ] | 0.031 |
| 9.000   | J | [kgcm <sup>2</sup> ] | 0.022 |
| 11.857  | J | [kgcm <sup>2</sup> ] | 0.013 |

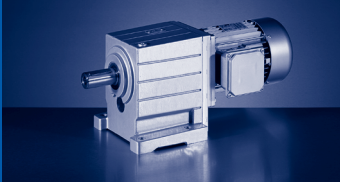
| Gearbox |   |                      | GST05 |
|---------|---|----------------------|-------|
| 1.600   | J | [kgcm <sup>2</sup> ] | 0.760 |
| 2.048   | J | [kgcm <sup>2</sup> ] | 0.549 |
| 2.240   | J | [kgcm <sup>2</sup> ] | 0.480 |
| 2.857   | J | [kgcm <sup>2</sup> ] | 0.354 |
| 3.500   | J | [kgcm <sup>2</sup> ] | 0.272 |
| 4.556   | J | [kgcm <sup>2</sup> ] | 0.175 |
| 5.667   | J | [kgcm <sup>2</sup> ] | 0.129 |
| 7.333   | J | [kgcm <sup>2</sup> ] | 0.062 |
| 8.900   | J | [kgcm <sup>2</sup> ] | 0.060 |
| 11.375  | J | [kgcm <sup>2</sup> ] | 0.039 |

| Gearbox |   |                      | GST06 |
|---------|---|----------------------|-------|
| 1.600   | J | [kgcm <sup>2</sup> ] | 2.010 |
| 2.048   | J | [kgcm <sup>2</sup> ] | 1.460 |
| 2.240   | J | [kgcm <sup>2</sup> ] | 1.270 |
| 2.857   | J | [kgcm <sup>2</sup> ] | 0.969 |
| 3.500   | J | [kgcm <sup>2</sup> ] | 0.736 |
| 4.556   | J | [kgcm <sup>2</sup> ] | 0.481 |
| 5.667   | J | [kgcm <sup>2</sup> ] | 0.359 |
| 7.333   | J | [kgcm <sup>2</sup> ] | 0.226 |
| 8.900   | J | [kgcm <sup>2</sup> ] | 0.167 |
| 11.250  | J | [kgcm <sup>2</sup> ] | 0.109 |

| Gearbox |   |                      | GST07 |
|---------|---|----------------------|-------|
| 1.625   | J | [kgcm <sup>2</sup> ] | 6.120 |
| 2.000   | J | [kgcm <sup>2</sup> ] | 4.780 |
| 2.240   | J | [kgcm <sup>2</sup> ] | 4.020 |
| 2.857   | J | [kgcm <sup>2</sup> ] | 2.690 |
| 3.500   | J | [kgcm <sup>2</sup> ] | 2.150 |
| 4.556   | J | [kgcm <sup>2</sup> ] | 1.370 |
| 5.583   | J | [kgcm <sup>2</sup> ] | 1.050 |
| 7.333   | J | [kgcm <sup>2</sup> ] | 0.664 |
| 8.900   | J | [kgcm <sup>2</sup> ] | 0.494 |
| 11.250  | J | [kgcm <sup>2</sup> ] | 0.320 |

| Gearbox |   |                      | GST09  |
|---------|---|----------------------|--------|
| 1.560   | J | [kgcm <sup>2</sup> ] | 22.200 |
| 2.048   | J | [kgcm <sup>2</sup> ] | 15.600 |
| 2.333   | J | [kgcm <sup>2</sup> ] | 12.200 |
| 2.810   | J | [kgcm <sup>2</sup> ] | 9.580  |
| 3.444   | J | [kgcm <sup>2</sup> ] | 7.300  |
| 4.667   | J | [kgcm <sup>2</sup> ] | 4.600  |
| 5.667   | J | [kgcm <sup>2</sup> ] | 3.510  |
| 7.333   | J | [kgcm <sup>2</sup> ] | 2.260  |
| 8.900   | J | [kgcm <sup>2</sup> ] | 1.660  |
| 11.250  | J | [kgcm <sup>2</sup> ] | 1.110  |

- ▶ The moments of inertia relate to the drive shaft of the gearbox.
- ▶ The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.



## GST

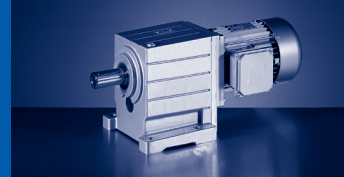
GST [kgcm<sup>2</sup>] - moments of inertia

### GST□□-2

- ▶ Moment of inertia (J) depending on ratio i

| Gearbox |   |                      | GST03 | Gearbox |   |                      | GST04 |
|---------|---|----------------------|-------|---------|---|----------------------|-------|
| 2.597   | J | [kgcm <sup>2</sup> ] | 0.260 | 2.956   | J | [kgcm <sup>2</sup> ] | 0.337 |
| 3.413   | J | [kgcm <sup>2</sup> ] | 0.169 | 3.333   | J | [kgcm <sup>2</sup> ] | 0.324 |
| 4.368   | J | [kgcm <sup>2</sup> ] | 0.117 | 4.053   | J | [kgcm <sup>2</sup> ] | 0.312 |
| 5.312   | J | [kgcm <sup>2</sup> ] | 0.179 | 4.571   | J | [kgcm <sup>2</sup> ] | 0.300 |
| 5.965   | J | [kgcm <sup>2</sup> ] | 0.173 | 5.187   | J | [kgcm <sup>2</sup> ] | 0.222 |
| 6.982   | J | [kgcm <sup>2</sup> ] | 0.122 | 5.850   | J | [kgcm <sup>2</sup> ] | 0.215 |
| 7.840   | J | [kgcm <sup>2</sup> ] | 0.119 | 6.400   | J | [kgcm <sup>2</sup> ] | 0.189 |
| 8.935   | J | [kgcm <sup>2</sup> ] | 0.089 | 7.040   | J | [kgcm <sup>2</sup> ] | 0.264 |
| 10.033  | J | [kgcm <sup>2</sup> ] | 0.086 | 8.000   | J | [kgcm <sup>2</sup> ] | 0.257 |
| 11.429  | J | [kgcm <sup>2</sup> ] | 0.059 | 9.010   | J | [kgcm <sup>2</sup> ] | 0.193 |
| 12.833  | J | [kgcm <sup>2</sup> ] | 0.057 | 9.856   | J | [kgcm <sup>2</sup> ] | 0.170 |
| 14.836  | J | [kgcm <sup>2</sup> ] | 0.041 | 11.200  | J | [kgcm <sup>2</sup> ] | 0.166 |
| 16.660  | J | [kgcm <sup>2</sup> ] | 0.040 | 12.571  | J | [kgcm <sup>2</sup> ] | 0.126 |
| 19.013  | J | [kgcm <sup>2</sup> ] | 0.028 | 14.286  | J | [kgcm <sup>2</sup> ] | 0.123 |
| 21.350  | J | [kgcm <sup>2</sup> ] | 0.027 | 15.400  | J | [kgcm <sup>2</sup> ] | 0.098 |
| 24.595  | J | [kgcm <sup>2</sup> ] | 0.019 | 17.500  | J | [kgcm <sup>2</sup> ] | 0.097 |
| 27.618  | J | [kgcm <sup>2</sup> ] | 0.019 | 19.360  | J | [kgcm <sup>2</sup> ] | 0.063 |
| 32.000  | J | [kgcm <sup>2</sup> ] | 0.012 | 22.000  | J | [kgcm <sup>2</sup> ] | 0.062 |
| 35.933  | J | [kgcm <sup>2</sup> ] | 0.012 | 24.933  | J | [kgcm <sup>2</sup> ] | 0.044 |
| 41.455  | J | [kgcm <sup>2</sup> ] | 0.008 | 28.333  | J | [kgcm <sup>2</sup> ] | 0.043 |
| 46.550  | J | [kgcm <sup>2</sup> ] | 0.008 | 31.600  | J | [kgcm <sup>2</sup> ] | 0.030 |
| 52.909  | J | [kgcm <sup>2</sup> ] | 0.005 | 35.909  | J | [kgcm <sup>2</sup> ] | 0.030 |
| 59.413  | J | [kgcm <sup>2</sup> ] | 0.005 | 39.600  | J | [kgcm <sup>2</sup> ] | 0.021 |
|         |   |                      |       | 45.000  | J | [kgcm <sup>2</sup> ] | 0.021 |
|         |   |                      |       | 52.171  | J | [kgcm <sup>2</sup> ] | 0.013 |
|         |   |                      |       | 59.286  | J | [kgcm <sup>2</sup> ] | 0.013 |

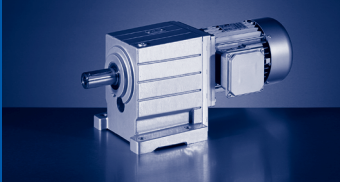
- ▶ The moments of inertia relate to the drive shaft of the gearbox.
- ▶ The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.



► Moment of inertia (J) depending on ratio i

| Gearbox |   |                      | GST05 | Gearbox |   |                      | GST06 |
|---------|---|----------------------|-------|---------|---|----------------------|-------|
| 2.956   | J | [kgcm <sup>2</sup> ] | 0.986 | 3.033   | J | [kgcm <sup>2</sup> ] | 2.720 |
| 3.333   | J | [kgcm <sup>2</sup> ] | 0.944 | 3.333   | J | [kgcm <sup>2</sup> ] | 2.610 |
| 4.053   | J | [kgcm <sup>2</sup> ] | 0.903 | 4.160   | J | [kgcm <sup>2</sup> ] | 2.510 |
| 4.571   | J | [kgcm <sup>2</sup> ] | 0.864 | 4.571   | J | [kgcm <sup>2</sup> ] | 2.410 |
| 5.187   | J | [kgcm <sup>2</sup> ] | 0.637 | 5.324   | J | [kgcm <sup>2</sup> ] | 1.760 |
| 5.850   | J | [kgcm <sup>2</sup> ] | 0.613 | 5.850   | J | [kgcm <sup>2</sup> ] | 1.710 |
| 6.400   | J | [kgcm <sup>2</sup> ] | 0.533 | 6.400   | J | [kgcm <sup>2</sup> ] | 1.470 |
| 7.238   | J | [kgcm <sup>2</sup> ] | 0.400 | 7.040   | J | [kgcm <sup>2</sup> ] | 2.070 |
| 8.163   | J | [kgcm <sup>2</sup> ] | 0.388 | 8.163   | J | [kgcm <sup>2</sup> ] | 1.060 |
| 9.010   | J | [kgcm <sup>2</sup> ] | 0.543 | 9.010   | J | [kgcm <sup>2</sup> ] | 1.500 |
| 10.000  | J | [kgcm <sup>2</sup> ] | 0.300 | 10.000  | J | [kgcm <sup>2</sup> ] | 0.820 |
| 11.200  | J | [kgcm <sup>2</sup> ] | 0.462 | 11.200  | J | [kgcm <sup>2</sup> ] | 1.260 |
| 13.016  | J | [kgcm <sup>2</sup> ] | 0.178 | 12.571  | J | [kgcm <sup>2</sup> ] | 0.955 |
| 14.356  | J | [kgcm <sup>2</sup> ] | 0.131 | 14.286  | J | [kgcm <sup>2</sup> ] | 0.932 |
| 16.190  | J | [kgcm <sup>2</sup> ] | 0.128 | 15.400  | J | [kgcm <sup>2</sup> ] | 0.748 |
| 17.500  | J | [kgcm <sup>2</sup> ] | 0.271 | 17.500  | J | [kgcm <sup>2</sup> ] | 0.733 |
| 20.044  | J | [kgcm <sup>2</sup> ] | 0.164 | 20.044  | J | [kgcm <sup>2</sup> ] | 0.457 |
| 22.778  | J | [kgcm <sup>2</sup> ] | 0.161 | 22.778  | J | [kgcm <sup>2</sup> ] | 0.450 |
| 24.933  | J | [kgcm <sup>2</sup> ] | 0.119 | 24.933  | J | [kgcm <sup>2</sup> ] | 0.332 |
| 28.333  | J | [kgcm <sup>2</sup> ] | 0.117 | 28.333  | J | [kgcm <sup>2</sup> ] | 0.326 |
| 32.267  | J | [kgcm <sup>2</sup> ] | 0.079 | 32.267  | J | [kgcm <sup>2</sup> ] | 0.221 |
| 36.667  | J | [kgcm <sup>2</sup> ] | 0.078 | 36.667  | J | [kgcm <sup>2</sup> ] | 0.218 |
| 39.160  | J | [kgcm <sup>2</sup> ] | 0.058 | 39.160  | J | [kgcm <sup>2</sup> ] | 0.162 |
| 44.500  | J | [kgcm <sup>2</sup> ] | 0.057 | 44.500  | J | [kgcm <sup>2</sup> ] | 0.160 |
| 50.050  | J | [kgcm <sup>2</sup> ] | 0.039 | 49.500  | J | [kgcm <sup>2</sup> ] | 0.110 |
| 56.875  | J | [kgcm <sup>2</sup> ] | 0.038 | 56.250  | J | [kgcm <sup>2</sup> ] | 0.108 |

- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.



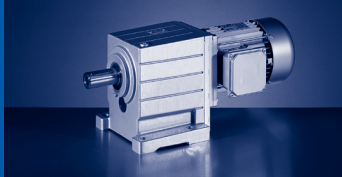
## GST

GST [kgcm<sup>2</sup>] - moments of inertia

► Moment of inertia (J) depending on ratio i

| Gearbox |   |                      | GST07 | Gearbox |   |                      | GST09  |
|---------|---|----------------------|-------|---------|---|----------------------|--------|
| 3.048   | J | [kgcm <sup>2</sup> ] | 8.200 | 4.056   | J | [kgcm <sup>2</sup> ] | 27.000 |
| 3.350   | J | [kgcm <sup>2</sup> ] | 7.920 | 4.457   | J | [kgcm <sup>2</sup> ] | 25.900 |
| 4.225   | J | [kgcm <sup>2</sup> ] | 7.650 | 5.324   | J | [kgcm <sup>2</sup> ] | 18.100 |
| 4.643   | J | [kgcm <sup>2</sup> ] | 7.390 | 5.850   | J | [kgcm <sup>2</sup> ] | 17.500 |
| 5.200   | J | [kgcm <sup>2</sup> ] | 5.640 | 6.667   | J | [kgcm <sup>2</sup> ] | 14.200 |
| 5.714   | J | [kgcm <sup>2</sup> ] | 5.460 | 7.305   | J | [kgcm <sup>2</sup> ] | 11.300 |
| 6.400   | J | [kgcm <sup>2</sup> ] | 4.490 | 8.027   | J | [kgcm <sup>2</sup> ] | 11.000 |
| 7.150   | J | [kgcm <sup>2</sup> ] | 6.270 | 9.010   | J | [kgcm <sup>2</sup> ] | 15.200 |
| 8.125   | J | [kgcm <sup>2</sup> ] | 6.040 | 10.267  | J | [kgcm <sup>2</sup> ] | 12.400 |
| 8.800   | J | [kgcm <sup>2</sup> ] | 4.730 | 11.667  | J | [kgcm <sup>2</sup> ] | 12.100 |
| 9.856   | J | [kgcm <sup>2</sup> ] | 3.900 | 12.362  | J | [kgcm <sup>2</sup> ] | 9.790  |
| 11.200  | J | [kgcm <sup>2</sup> ] | 3.780 | 14.048  | J | [kgcm <sup>2</sup> ] | 9.530  |
| 12.571  | J | [kgcm <sup>2</sup> ] | 2.860 | 15.156  | J | [kgcm <sup>2</sup> ] | 7.650  |
| 14.286  | J | [kgcm <sup>2</sup> ] | 2.790 | 17.222  | J | [kgcm <sup>2</sup> ] | 7.490  |
| 15.400  | J | [kgcm <sup>2</sup> ] | 2.260 | 20.533  | J | [kgcm <sup>2</sup> ] | 4.500  |
| 17.500  | J | [kgcm <sup>2</sup> ] | 2.210 | 23.333  | J | [kgcm <sup>2</sup> ] | 4.410  |
| 20.044  | J | [kgcm <sup>2</sup> ] | 1.380 | 24.933  | J | [kgcm <sup>2</sup> ] | 3.380  |
| 22.778  | J | [kgcm <sup>2</sup> ] | 1.350 | 28.333  | J | [kgcm <sup>2</sup> ] | 3.320  |
| 24.567  | J | [kgcm <sup>2</sup> ] | 1.020 | 32.267  | J | [kgcm <sup>2</sup> ] | 2.250  |
| 27.917  | J | [kgcm <sup>2</sup> ] | 1.010 | 36.667  | J | [kgcm <sup>2</sup> ] | 2.210  |
| 32.267  | J | [kgcm <sup>2</sup> ] | 0.664 | 39.160  | J | [kgcm <sup>2</sup> ] | 1.640  |
| 36.667  | J | [kgcm <sup>2</sup> ] | 0.653 | 44.500  | J | [kgcm <sup>2</sup> ] | 1.620  |
| 39.160  | J | [kgcm <sup>2</sup> ] | 0.487 | 49.500  | J | [kgcm <sup>2</sup> ] | 1.120  |
| 44.500  | J | [kgcm <sup>2</sup> ] | 0.479 | 56.250  | J | [kgcm <sup>2</sup> ] | 1.100  |
| 49.500  | J | [kgcm <sup>2</sup> ] | 0.330 |         |   |                      |        |
| 56.250  | J | [kgcm <sup>2</sup> ] | 0.325 |         |   |                      |        |

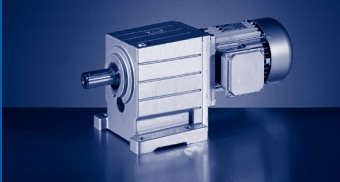
- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.



► Moment of inertia (J) depending on ratio i

| Gearbox |   |                      | GST11  | Gearbox |   |                      | GST14   |
|---------|---|----------------------|--------|---------|---|----------------------|---------|
| 4.056   | J | [kgcm <sup>2</sup> ] | 82.200 | 4.225   | J | [kgcm <sup>2</sup> ] | 226.000 |
| 4.457   | J | [kgcm <sup>2</sup> ] | 79.000 | 4.643   | J | [kgcm <sup>2</sup> ] | 216.000 |
| 5.324   | J | [kgcm <sup>2</sup> ] | 55.400 | 5.200   | J | [kgcm <sup>2</sup> ] | 168.000 |
| 5.850   | J | [kgcm <sup>2</sup> ] | 53.500 | 5.714   | J | [kgcm <sup>2</sup> ] | 161.000 |
| 6.400   | J | [kgcm <sup>2</sup> ] | 45.700 | 6.286   | J | [kgcm <sup>2</sup> ] | 141.000 |
| 6.864   | J | [kgcm <sup>2</sup> ] | 67.500 | 7.150   | J | [kgcm <sup>2</sup> ] | 183.000 |
| 7.800   | J | [kgcm <sup>2</sup> ] | 65.100 | 8.027   | J | [kgcm <sup>2</sup> ] | 100.000 |
| 9.010   | J | [kgcm <sup>2</sup> ] | 46.800 | 8.800   | J | [kgcm <sup>2</sup> ] | 139.000 |
| 9.856   | J | [kgcm <sup>2</sup> ] | 40.200 | 9.841   | J | [kgcm <sup>2</sup> ] | 75.100  |
| 11.200  | J | [kgcm <sup>2</sup> ] | 39.000 | 11.000  | J | [kgcm <sup>2</sup> ] | 119.000 |
| 12.571  | J | [kgcm <sup>2</sup> ] | 29.400 | 12.362  | J | [kgcm <sup>2</sup> ] | 89.000  |
| 14.286  | J | [kgcm <sup>2</sup> ] | 28.700 | 14.048  | J | [kgcm <sup>2</sup> ] | 86.600  |
| 15.400  | J | [kgcm <sup>2</sup> ] | 23.000 | 15.156  | J | [kgcm <sup>2</sup> ] | 67.600  |
| 17.500  | J | [kgcm <sup>2</sup> ] | 22.500 | 17.222  | J | [kgcm <sup>2</sup> ] | 66.000  |
| 20.289  | J | [kgcm <sup>2</sup> ] | 14.300 | 20.044  | J | [kgcm <sup>2</sup> ] | 45.800  |
| 23.056  | J | [kgcm <sup>2</sup> ] | 14.100 | 22.778  | J | [kgcm <sup>2</sup> ] | 44.900  |
| 24.933  | J | [kgcm <sup>2</sup> ] | 10.600 | 24.567  | J | [kgcm <sup>2</sup> ] | 33.200  |
| 28.333  | J | [kgcm <sup>2</sup> ] | 10.400 | 27.917  | J | [kgcm <sup>2</sup> ] | 32.600  |
| 32.267  | J | [kgcm <sup>2</sup> ] | 7.040  | 32.267  | J | [kgcm <sup>2</sup> ] | 21.500  |
| 36.667  | J | [kgcm <sup>2</sup> ] | 6.930  | 36.667  | J | [kgcm <sup>2</sup> ] | 21.200  |
| 39.160  | J | [kgcm <sup>2</sup> ] | 5.150  | 39.160  | J | [kgcm <sup>2</sup> ] | 15.700  |
| 44.500  | J | [kgcm <sup>2</sup> ] | 5.080  | 44.500  | J | [kgcm <sup>2</sup> ] | 15.500  |
| 49.500  | J | [kgcm <sup>2</sup> ] | 3.520  | 49.500  | J | [kgcm <sup>2</sup> ] | 10.600  |
| 56.250  | J | [kgcm <sup>2</sup> ] | 3.440  | 56.250  | J | [kgcm <sup>2</sup> ] | 10.500  |

- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.



# GST

GST [kgcm<sup>2</sup>] - moments of inertia

## GST□□-3

► Moment of inertia (J) depending on ratio i

| Gearbox |   |                      | GST05 |
|---------|---|----------------------|-------|
| 36.267  | J | [kgcm <sup>2</sup> ] | 0.195 |
| 46.259  | J | [kgcm <sup>2</sup> ] | 0.141 |
| 56.667  | J | [kgcm <sup>2</sup> ] | 0.108 |
| 63.467  | J | [kgcm <sup>2</sup> ] | 0.192 |
| 71.238  | J | [kgcm <sup>2</sup> ] | 0.073 |
| 80.952  | J | [kgcm <sup>2</sup> ] | 0.139 |
| 91.746  | J | [kgcm <sup>2</sup> ] | 0.050 |
| 99.167  | J | [kgcm <sup>2</sup> ] | 0.107 |
| 116.277 | J | [kgcm <sup>2</sup> ] | 0.033 |
| 124.667 | J | [kgcm <sup>2</sup> ] | 0.072 |
| 145.714 | J | [kgcm <sup>2</sup> ] | 0.023 |
| 160.556 | J | [kgcm <sup>2</sup> ] | 0.050 |
| 179.067 | J | [kgcm <sup>2</sup> ] | 0.033 |
| 191.973 | J | [kgcm <sup>2</sup> ] | 0.014 |
| 224.400 | J | [kgcm <sup>2</sup> ] | 0.023 |
| 255.000 | J | [kgcm <sup>2</sup> ] | 0.023 |
| 295.638 | J | [kgcm <sup>2</sup> ] | 0.014 |
| 335.952 | J | [kgcm <sup>2</sup> ] | 0.014 |

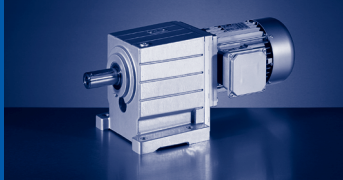
| Gearbox |   |                      | GST06 |
|---------|---|----------------------|-------|
| 39.200  | J | [kgcm <sup>2</sup> ] | 0.362 |
| 44.000  | J | [kgcm <sup>2</sup> ] | 0.195 |
| 51.022  | J | [kgcm <sup>2</sup> ] | 0.320 |
| 53.900  | J | [kgcm <sup>2</sup> ] | 0.178 |
| 67.760  | J | [kgcm <sup>2</sup> ] | 0.114 |
| 70.156  | J | [kgcm <sup>2</sup> ] | 0.160 |
| 80.952  | J | [kgcm <sup>2</sup> ] | 0.203 |
| 87.267  | J | [kgcm <sup>2</sup> ] | 0.150 |
| 99.167  | J | [kgcm <sup>2</sup> ] | 0.150 |
| 109.707 | J | [kgcm <sup>2</sup> ] | 0.096 |
| 124.667 | J | [kgcm <sup>2</sup> ] | 0.096 |
| 141.289 | J | [kgcm <sup>2</sup> ] | 0.063 |
| 160.556 | J | [kgcm <sup>2</sup> ] | 0.063 |
| 179.067 | J | [kgcm <sup>2</sup> ] | 0.043 |
| 203.485 | J | [kgcm <sup>2</sup> ] | 0.042 |
| 231.733 | J | [kgcm <sup>2</sup> ] | 0.040 |
| 255.000 | J | [kgcm <sup>2</sup> ] | 0.029 |
| 290.400 | J | [kgcm <sup>2</sup> ] | 0.027 |
| 330.000 | J | [kgcm <sup>2</sup> ] | 0.027 |
| 382.590 | J | [kgcm <sup>2</sup> ] | 0.026 |
| 434.762 | J | [kgcm <sup>2</sup> ] | 0.025 |

| Gearbox |   |                      | GST07 |
|---------|---|----------------------|-------|
| 39.200  | J | [kgcm <sup>2</sup> ] | 0.974 |
| 44.000  | J | [kgcm <sup>2</sup> ] | 0.534 |
| 51.022  | J | [kgcm <sup>2</sup> ] | 0.843 |
| 53.900  | J | [kgcm <sup>2</sup> ] | 0.484 |
| 65.079  | J | [kgcm <sup>2</sup> ] | 0.313 |
| 70.156  | J | [kgcm <sup>2</sup> ] | 0.431 |
| 79.762  | J | [kgcm <sup>2</sup> ] | 0.536 |
| 85.983  | J | [kgcm <sup>2</sup> ] | 0.400 |
| 97.708  | J | [kgcm <sup>2</sup> ] | 0.399 |
| 111.915 | J | [kgcm <sup>2</sup> ] | 0.238 |
| 127.176 | J | [kgcm <sup>2</sup> ] | 0.237 |
| 139.211 | J | [kgcm <sup>2</sup> ] | 0.166 |
| 158.194 | J | [kgcm <sup>2</sup> ] | 0.166 |
| 180.156 | J | [kgcm <sup>2</sup> ] | 0.108 |
| 204.722 | J | [kgcm <sup>2</sup> ] | 0.107 |
| 236.622 | J | [kgcm <sup>2</sup> ] | 0.101 |
| 248.458 | J | [kgcm <sup>2</sup> ] | 0.077 |
| 268.889 | J | [kgcm <sup>2</sup> ] | 0.101 |
| 326.333 | J | [kgcm <sup>2</sup> ] | 0.073 |
| 367.033 | J | [kgcm <sup>2</sup> ] | 0.094 |
| 417.083 | J | [kgcm <sup>2</sup> ] | 0.067 |

| Gearbox |   |                      | GST09 |
|---------|---|----------------------|-------|
| 40.136  | J | [kgcm <sup>2</sup> ] | 2.140 |
| 43.267  | J | [kgcm <sup>2</sup> ] | 1.550 |
| 49.167  | J | [kgcm <sup>2</sup> ] | 1.530 |
| 53.044  | J | [kgcm <sup>2</sup> ] | 1.380 |
| 60.278  | J | [kgcm <sup>2</sup> ] | 1.370 |
| 71.867  | J | [kgcm <sup>2</sup> ] | 1.170 |
| 81.667  | J | [kgcm <sup>2</sup> ] | 1.160 |
| 93.541  | J | [kgcm <sup>2</sup> ] | 0.706 |
| 99.167  | J | [kgcm <sup>2</sup> ] | 1.070 |
| 113.585 | J | [kgcm <sup>2</sup> ] | 0.652 |
| 129.074 | J | [kgcm <sup>2</sup> ] | 0.649 |
| 141.289 | J | [kgcm <sup>2</sup> ] | 0.458 |
| 160.556 | J | [kgcm <sup>2</sup> ] | 0.456 |
| 182.844 | J | [kgcm <sup>2</sup> ] | 0.297 |
| 207.778 | J | [kgcm <sup>2</sup> ] | 0.295 |
| 236.622 | J | [kgcm <sup>2</sup> ] | 0.275 |
| 252.167 | J | [kgcm <sup>2</sup> ] | 0.212 |
| 268.889 | J | [kgcm <sup>2</sup> ] | 0.275 |
| 326.333 | J | [kgcm <sup>2</sup> ] | 0.198 |
| 363.000 | J | [kgcm <sup>2</sup> ] | 0.255 |
| 412.500 | J | [kgcm <sup>2</sup> ] | 0.183 |

- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.

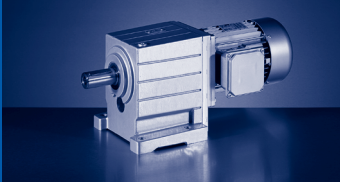




► Moment of inertia (J) depending on ratio i

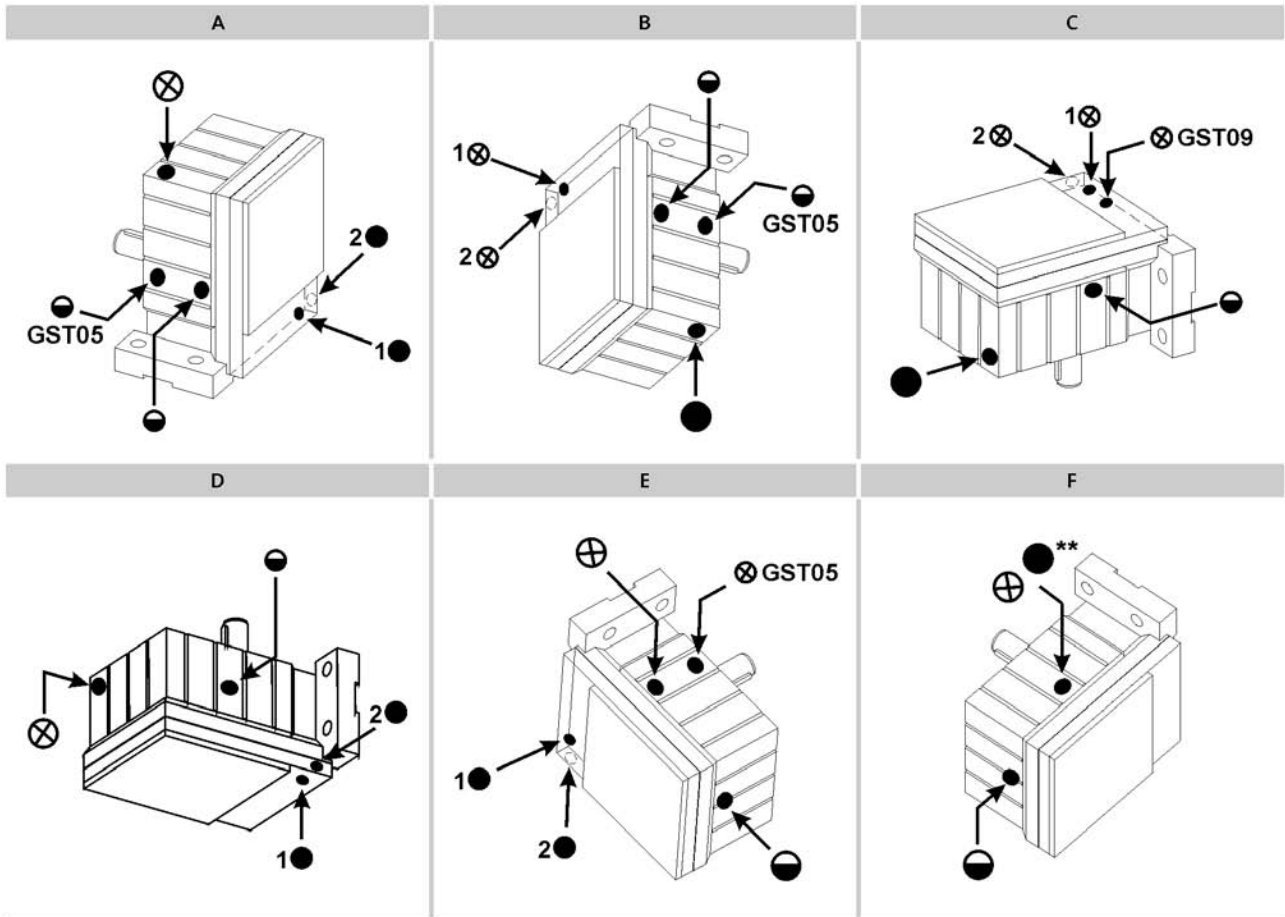
| Gearbox |   |                      | GST11 | Gearbox |   |                      | GST14  |
|---------|---|----------------------|-------|---------|---|----------------------|--------|
| 40.816  | J | [kgcm <sup>2</sup> ] | 6.360 | 40.185  | J | [kgcm <sup>2</sup> ] | 24.400 |
| 44.000  | J | [kgcm <sup>2</sup> ] | 5.660 | 42.580  | J | [kgcm <sup>2</sup> ] | 18.300 |
| 50.000  | J | [kgcm <sup>2</sup> ] | 5.600 | 48.386  | J | [kgcm <sup>2</sup> ] | 18.100 |
| 57.968  | J | [kgcm <sup>2</sup> ] | 4.770 | 53.148  | J | [kgcm <sup>2</sup> ] | 20.500 |
| 61.250  | J | [kgcm <sup>2</sup> ] | 4.080 | 59.321  | J | [kgcm <sup>2</sup> ] | 13.200 |
| 71.011  | J | [kgcm <sup>2</sup> ] | 3.520 | 69.042  | J | [kgcm <sup>2</sup> ] | 11.500 |
| 80.694  | J | [kgcm <sup>2</sup> ] | 3.500 | 78.457  | J | [kgcm <sup>2</sup> ] | 11.400 |
| 87.267  | J | [kgcm <sup>2</sup> ] | 3.220 | 93.541  | J | [kgcm <sup>2</sup> ] | 6.570  |
| 99.167  | J | [kgcm <sup>2</sup> ] | 3.200 | 96.157  | J | [kgcm <sup>2</sup> ] | 10.400 |
| 112.933 | J | [kgcm <sup>2</sup> ] | 2.930 | 106.296 | J | [kgcm <sup>2</sup> ] | 6.520  |
| 129.074 | J | [kgcm <sup>2</sup> ] | 1.940 | 130.278 | J | [kgcm <sup>2</sup> ] | 6.000  |
| 146.993 | J | [kgcm <sup>2</sup> ] | 1.770 | 139.211 | J | [kgcm <sup>2</sup> ] | 4.420  |
| 158.194 | J | [kgcm <sup>2</sup> ] | 1.400 | 158.194 | J | [kgcm <sup>2</sup> ] | 4.400  |
| 180.156 | J | [kgcm <sup>2</sup> ] | 1.290 | 171.111 | J | [kgcm <sup>2</sup> ] | 5.490  |
| 207.778 | J | [kgcm <sup>2</sup> ] | 0.880 | 204.722 | J | [kgcm <sup>2</sup> ] | 2.860  |
| 236.622 | J | [kgcm <sup>2</sup> ] | 0.818 | 236.622 | J | [kgcm <sup>2</sup> ] | 2.650  |
| 252.167 | J | [kgcm <sup>2</sup> ] | 0.633 | 248.458 | J | [kgcm <sup>2</sup> ] | 2.060  |
| 268.889 | J | [kgcm <sup>2</sup> ] | 0.816 | 268.889 | J | [kgcm <sup>2</sup> ] | 2.650  |
| 326.333 | J | [kgcm <sup>2</sup> ] | 0.589 | 326.333 | J | [kgcm <sup>2</sup> ] | 1.920  |
| 363.000 | J | [kgcm <sup>2</sup> ] | 0.756 | 363.000 | J | [kgcm <sup>2</sup> ] | 2.450  |
| 412.500 | J | [kgcm <sup>2</sup> ] | 0.545 | 412.500 | J | [kgcm <sup>2</sup> ] | 1.780  |

- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.



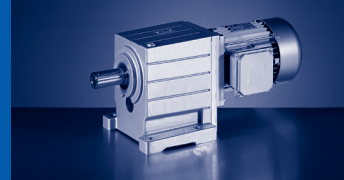
**Position of ventilation, sealing elements and oil level check**

GST05...09-1

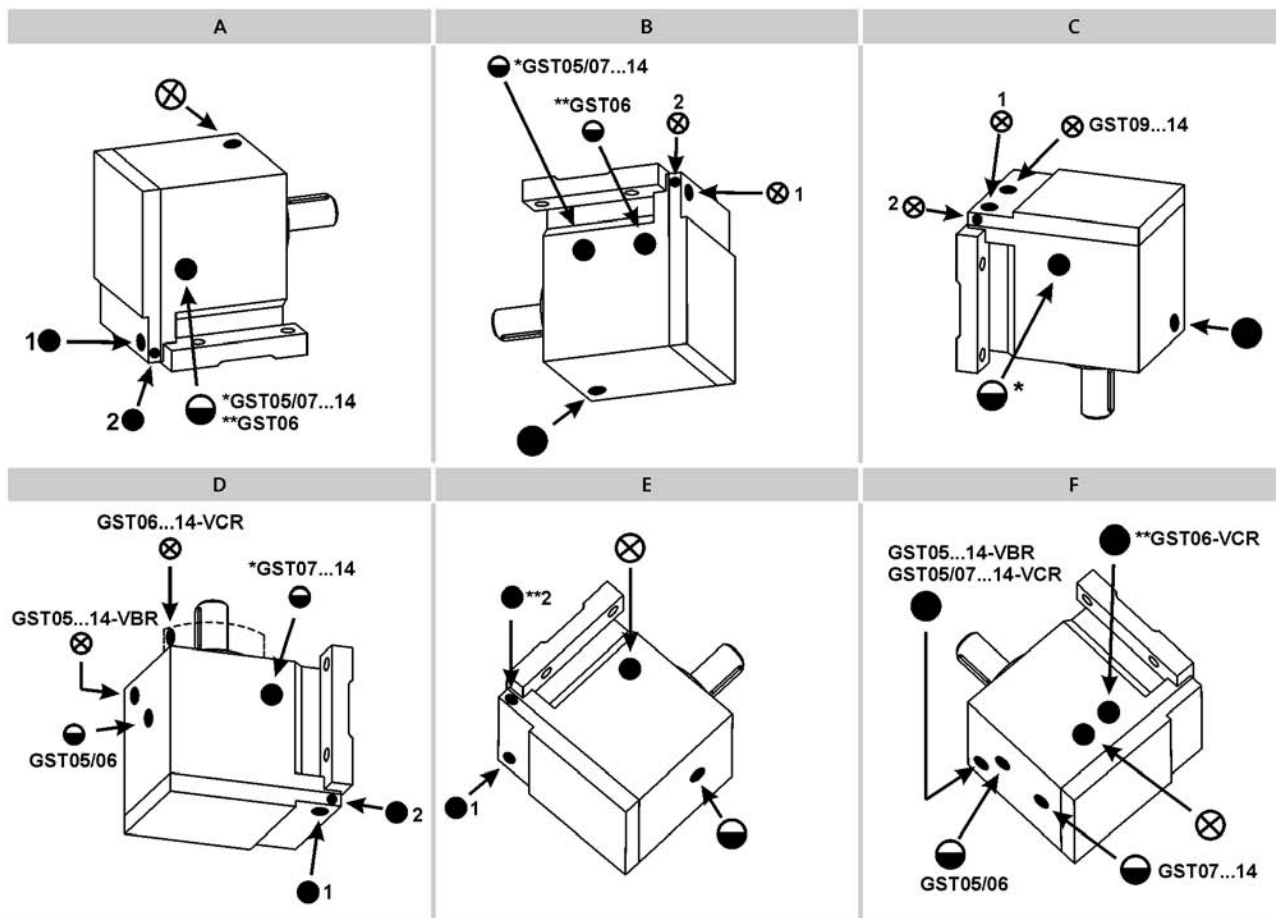


- A ... F Mounting position  
 ⊗ Ventilation / Oil filler plug  
 ● Oil drain plug  
 ⊖ Oil control plug  
 \* On both sides  
 \*\* On opposite side

- Pos.1 standard  
 Pos.2 only with:  
 ▶ GST05-1M V□□ 090C□□  
 ▶ GST05-1M V□□ 100C□□  
 ▶ GST06-1M V□□ 112C□□



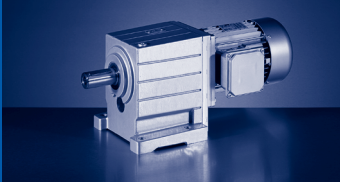
GST05...14-2



A ... F Mounting position  
 ⊗ Ventilation / Oil filler plug  
 ● Oil drain plug  
 ◐ Oil control plug  
 \* On both sides  
 \*\* On opposite side

Pos.1 standard  
 Pos.2 only with:  
 ▶ GST05-2M V□□ 090C□□  
 ▶ GST05-2M V□□ 100C□□  
 ▶ GST06-2M V□□ 112C□□

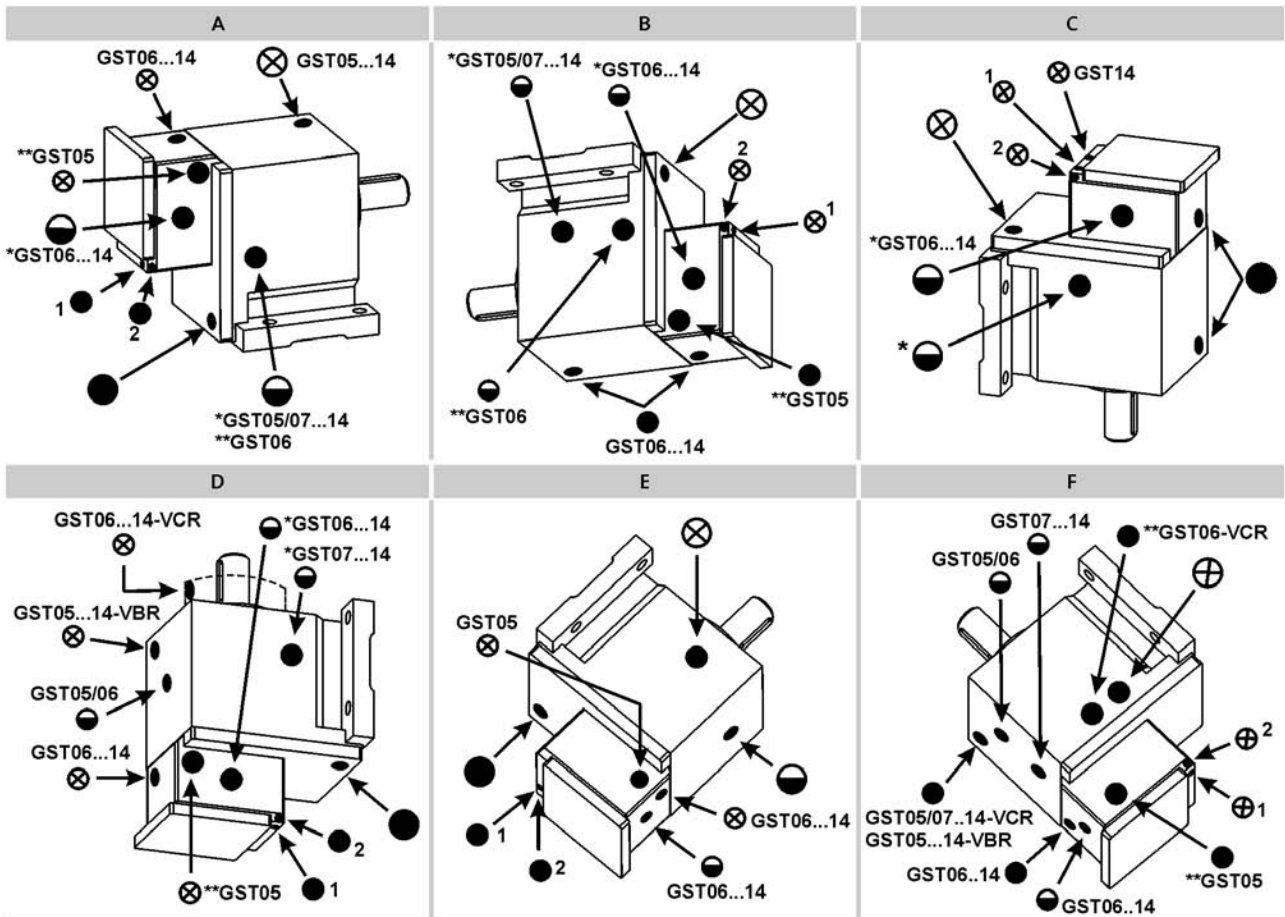
3



# GST

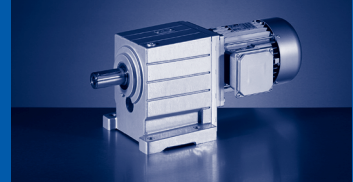
GST [ ⊗ ] - ventilation

GST05...14-3



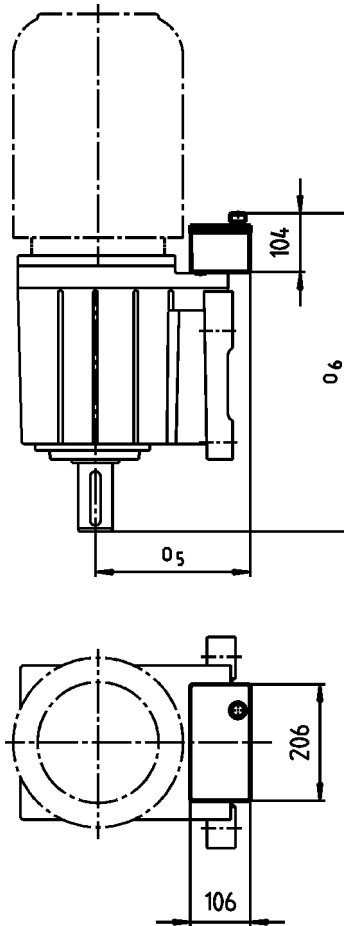
- A ... F Mounting position
- ⊗ Ventilation / Oil filler plug
- Oil drain plug
- ◐ Oil control plug
- \* On both sides
- \*\* On opposite side

- Item 1 standard
- Item 2 only with:
- ▶ GST07-3M V□□ 090C□□
- ▶ GST07-3M V□□ 100C□□
- ▶ GST09-3M V□□ 112C□□



### Compensation reservoir for mounting position C

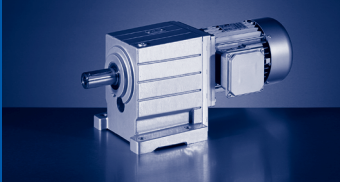
GST□□-2



3

| Motor        | 090<br>100             |                        | 112                    |                        | 132                    |                        |                        |                        |
|--------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|              | o <sub>5</sub><br>[mm] | o <sub>6</sub><br>[mm] | o <sub>5</sub><br>[mm] | o <sub>6</sub><br>[mm] | o <sub>5</sub><br>[mm] | o <sub>6</sub><br>[mm] | o <sub>5</sub><br>[mm] | o <sub>6</sub><br>[mm] |
| <b>GST09</b> | 206                    | 477                    | 226                    | 477                    | 245                    | 477                    | 245                    | 477                    |
| <b>GST11</b> | 208                    | 536                    | 230                    | 540                    | 254                    | 540                    | 254                    | 540                    |
| <b>GST14</b> |                        |                        | 252                    | 640                    | 282                    | 640                    | 282                    | 640                    |

► Terminal box position 4 not permitted.



# GST

GST [kg] - MF□MA

## GST□□-1M VBR

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|--------|------------------|------------------|------------------|--------|
| GST04 | m [kg] | 8                | 10               | 16               |        |
| GST05 | m [kg] | 12               | 14               | 19               | 27     |
| GST06 | m [kg] | 16               | 18               | 23               | 31     |
| GST07 | m [kg] |                  |                  | 33               | 41     |
| GST09 | m [kg] |                  |                  |                  | 55     |

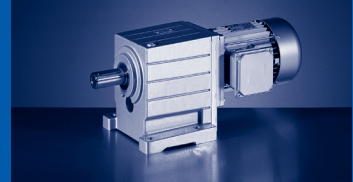
|       |        | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|--------|------------------|--------|------------------|--------|
| GST05 | m [kg] | 35               |        |                  |        |
| GST06 | m [kg] | 40               | 53     |                  |        |
| GST07 | m [kg] | 49               | 62     | 92               |        |
| GST09 | m [kg] | 64               | 76     |                  | 107    |

## GST□□-1M VCR

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|--------|------------------|------------------|------------------|--------|
| GST04 | m [kg] | 8                | 10               | 15               |        |
| GST05 | m [kg] | 11               | 13               | 18               | 26     |
| GST06 | m [kg] | 15               | 17               | 21               | 30     |
| GST07 | m [kg] |                  |                  | 29               | 38     |
| GST09 | m [kg] |                  |                  |                  | 51     |

|       |        | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|--------|------------------|--------|------------------|--------|
| GST05 | m [kg] | 34               |        |                  |        |
| GST06 | m [kg] | 38               | 51     |                  |        |
| GST07 | m [kg] | 46               | 59     | 89               |        |
| GST09 | m [kg] | 59               | 72     |                  | 102    |

- Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).

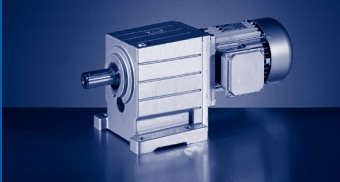


### GST□□-1M VCK

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|--------|------------------|------------------|------------------|--------|
| GST04 | m [kg] | 9                | 11               | 16               |        |
| GST05 | m [kg] | 13               | 15               | 19               | 27     |
| GST06 | m [kg] | 18               | 20               | 24               | 33     |
| GST07 | m [kg] |                  |                  | 33               | 42     |
| GST09 | m [kg] |                  |                  |                  | 58     |

|       |        | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|--------|------------------|--------|------------------|--------|
| GST05 | m [kg] | 36               |        |                  |        |
| GST06 | m [kg] | 41               | 54     |                  |        |
| GST07 | m [kg] | 50               | 63     | 93               |        |
| GST09 | m [kg] | 66               | 79     |                  | 109    |

- ▶ Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



## GST

GST [kg] - MF□MA

### GST□□-2M VAR / VBR

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|---|------|------------------|------------------|------------------|--------|
| GST03 | m | [kg] | 6                |                  |                  |        |
| GST04 | m | [kg] | 10               | 12               | 18               |        |
| GST05 | m | [kg] | 16               | 18               | 22               | 30     |
| GST06 | m | [kg] | 23               | 25               | 29               | 38     |
| GST07 | m | [kg] |                  |                  | 45               | 53     |
| GST09 | m | [kg] |                  |                  |                  | 80     |

|       |   |      | 100C12 | 100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|---|------|--------|--------|--------|------------------|--------|
| GST05 | m | [kg] | 39     |        |        |                  |        |
| GST06 | m | [kg] |        | 46     | 59     |                  |        |
| GST07 | m | [kg] |        | 61     | 74     | 104              |        |
| GST09 | m | [kg] |        | 88     | 101    |                  | 131    |
| GST11 | m | [kg] |        | 134    | 146    |                  | 176    |
| GST14 | m | [kg] |        |        | 238    |                  | 265    |

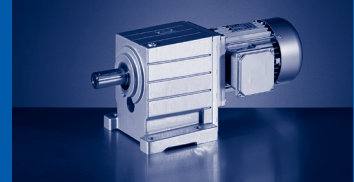
### GST□□-2M VCR

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|---|------|------------------|------------------|------------------|--------|
| GST03 | m | [kg] | 6                |                  |                  |        |
| GST04 | m | [kg] | 10               | 12               | 17               |        |
| GST05 | m | [kg] | 14               | 16               | 21               | 29     |
| GST06 | m | [kg] | 20               | 22               | 27               | 35     |
| GST07 | m | [kg] |                  |                  | 40               | 48     |
| GST09 | m | [kg] |                  |                  |                  | 71     |

|       |   |      | 100C12 | 100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|---|------|--------|--------|--------|------------------|--------|
| GST05 | m | [kg] | 37     |        |        |                  |        |
| GST06 | m | [kg] |        | 44     | 57     |                  |        |
| GST07 | m | [kg] |        | 57     | 70     | 100              |        |
| GST09 | m | [kg] |        | 80     | 92     |                  | 123    |
| GST11 | m | [kg] |        | 120    | 131    |                  | 161    |
| GST14 | m | [kg] |        |        | 210    |                  | 237    |

- Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).





### GST□□-2M VCK

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|---|------|------------------|------------------|------------------|--------|
| GST03 | m | [kg] | 7                |                  |                  |        |
| GST04 | m | [kg] | 11               | 13               | 18               |        |
| GST05 | m | [kg] | 16               | 18               | 22               | 30     |
| GST06 | m | [kg] | 23               | 25               | 30               | 38     |
| GST07 | m | [kg] |                  |                  | 44               | 52     |
| GST09 | m | [kg] |                  |                  |                  | 78     |

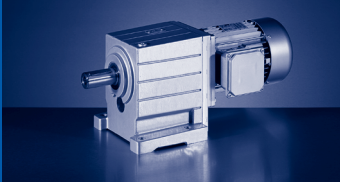
|       |   |      | 100C12 | 100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|---|------|--------|--------|--------|------------------|--------|
| GST05 | m | [kg] | 39     |        |        |                  |        |
| GST06 | m | [kg] |        | 47     | 60     |                  |        |
| GST07 | m | [kg] |        | 61     | 74     | 104              |        |
| GST09 | m | [kg] |        | 87     | 99     |                  | 130    |
| GST11 | m | [kg] |        | 130    | 142    |                  | 171    |
| GST14 | m | [kg] |        |        | 226    |                  | 253    |

### GST□□-2M VAL

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|---|------|------------------|------------------|------------------|--------|
| GST04 | m | [kg] | 11               | 13               | 19               |        |
| GST05 | m | [kg] | 17               | 19               | 24               | 32     |
| GST06 | m | [kg] | 26               | 28               | 32               | 41     |
| GST07 | m | [kg] |                  |                  | 49               | 57     |
| GST09 | m | [kg] |                  |                  |                  | 87     |

|       |   |      | 100C12 | 100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|---|------|--------|--------|--------|------------------|--------|
| GST05 | m | [kg] | 40     |        |        |                  |        |
| GST06 | m | [kg] |        | 49     | 62     |                  |        |
| GST07 | m | [kg] |        | 65     | 78     | 108              |        |
| GST09 | m | [kg] |        | 95     | 108    |                  | 138    |
| GST11 | m | [kg] |        | 145    | 157    |                  | 186    |
| GST14 | m | [kg] |        |        | 254    |                  | 281    |

- Weights with oil filling for mounting position A; all values are approximate.  
The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



# GST

GST [kg] - MF□MA

## GST□□-3M VAR / VBR

|       |   |      | 063C32<br>063C42 | 071C32 | 071C42 | 080C32<br>080C42 |
|-------|---|------|------------------|--------|--------|------------------|
| GST05 | m | [kg] | 16               | 19     |        |                  |
| GST06 | m | [kg] | 26               |        | 29     | 34               |
| GST07 | m | [kg] | 46               |        | 48     | 53               |
| GST09 | m | [kg] | 78               |        | 80     | 85               |
| GST11 | m | [kg] |                  |        |        | 139              |

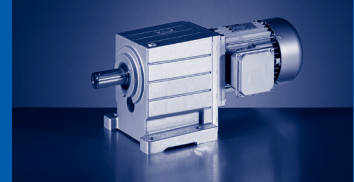
|       |   |      | 090C32 | 100C12 | 100C32 | 112C22 | 132C12<br>132C22<br>132C32 |
|-------|---|------|--------|--------|--------|--------|----------------------------|
| GST07 | m | [kg] | 61     | 69     |        |        |                            |
| GST09 | m | [kg] | 93     |        | 101    | 114    |                            |
| GST11 | m | [kg] | 147    |        | 156    | 169    | 198                        |
| GST14 | m | [kg] | 253    |        | 262    | 274    | 305                        |

## GST□□-3M VCR

|       |   |      | 063C32<br>063C42 | 071C32 | 071C42 | 080C32<br>080C42 |
|-------|---|------|------------------|--------|--------|------------------|
| GST05 | m | [kg] | 15               | 17     |        |                  |
| GST06 | m | [kg] | 24               |        | 26     | 31               |
| GST07 | m | [kg] | 41               |        | 44     | 48               |
| GST09 | m | [kg] | 69               |        | 71     | 76               |
| GST11 | m | [kg] |                  |        |        | 124              |

|       |   |      | 090C32 | 100C12 | 100C32 | 112C22 | 132C12<br>132C22<br>132C32 |
|-------|---|------|--------|--------|--------|--------|----------------------------|
| GST07 | m | [kg] | 56     | 65     |        |        |                            |
| GST09 | m | [kg] | 84     |        | 93     | 106    |                            |
| GST11 | m | [kg] | 132    |        | 141    | 154    | 183                        |
| GST14 | m | [kg] | 225    |        | 234    | 246    | 277                        |

- ▶ Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



### GST□□-3M VCK

|       |   |      | 063C32<br>063C42 | 071C32 | 071C42 | 080C32<br>080C42 |
|-------|---|------|------------------|--------|--------|------------------|
| GST05 | m | [kg] | 16               | 19     |        |                  |
| GST06 | m | [kg] | 27               |        | 29     | 34               |
| GST07 | m | [kg] | 45               |        | 48     | 52               |
| GST09 | m | [kg] | 76               |        | 78     | 83               |
| GST11 | m | [kg] |                  |        |        | 135              |

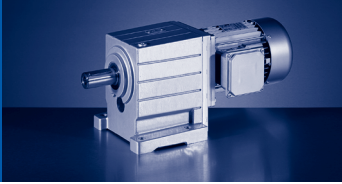
|       |   |      | 090C32 | 100C12 | 100C32 | 112C22 | 132C12<br>132C22<br>132C32 |
|-------|---|------|--------|--------|--------|--------|----------------------------|
| GST07 | m | [kg] | 60     | 69     |        |        |                            |
| GST09 | m | [kg] | 91     |        | 100    | 113    |                            |
| GST11 | m | [kg] | 143    |        | 151    | 164    | 194                        |
| GST14 | m | [kg] | 241    |        | 249    | 262    | 292                        |

### GST□□-3M VAL

|       |   |      | 063C32<br>063C42 | 071C32 | 071C42 | 080C32<br>080C42 |
|-------|---|------|------------------|--------|--------|------------------|
| GST05 | m | [kg] | 18               | 20     |        |                  |
| GST06 | m | [kg] | 29               |        | 32     | 37               |
| GST07 | m | [kg] | 50               |        | 52     | 57               |
| GST09 | m | [kg] | 85               |        | 87     | 92               |
| GST11 | m | [kg] |                  |        |        | 150              |

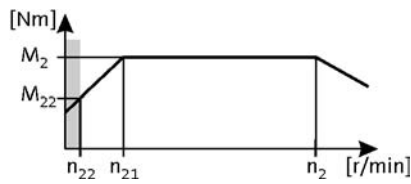
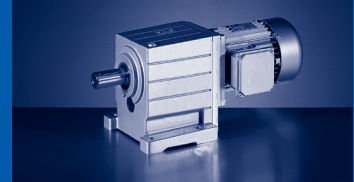
|       |   |      | 090C32 | 100C12 | 100C32 | 112C22 | 132C12<br>132C22<br>132C32 |
|-------|---|------|--------|--------|--------|--------|----------------------------|
| GST07 | m | [kg] | 65     | 73     |        |        |                            |
| GST09 | m | [kg] | 100    |        | 108    | 121    |                            |
| GST11 | m | [kg] | 158    |        | 166    | 179    | 209                        |
| GST14 | m | [kg] | 269    |        | 277    | 290    | 320                        |

- ▶ Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



## GST

GST [kg] - MF□MA

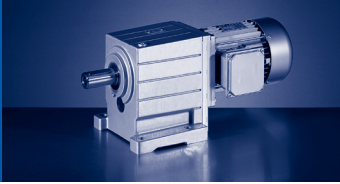


120 Hz:  $P_N = 0.55 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.3 \dots 3440 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i      |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|--------|-------------------|-----------------|-----|
| 70                  | 293                 | - | 1680             | 2.3              | 3.0           | 4.5 | 2.048  | GST04-1M□□□063C32 | E84AV□□□5514□□□ | 112 |
| 64                  | 268                 | - | 1536             | 2.6              | 3.0           | 3.9 | 2.240  | GST05-1M□□□063C32 | E84AV□□□5514□□□ | 112 |
| 50                  | 210                 | - | 1204             | 3.3              | 4.0           | 4.1 | 2.857  | GST04-1M□□□063C32 | E84AV□□□5514□□□ | 112 |
| 41                  | 171                 | - | 983              | 4.0              | 5.0           | 3.6 | 3.500  | GST04-1M□□□063C32 | E84AV□□□5514□□□ | 112 |
| 33                  | 137                 | - | 788              | 4.9              | 7.0           | 2.5 | 4.368  | GST03-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 33                  | 136                 | - | 782              | 5.0              | 7.0           | 2.9 | 4.400  | GST04-1M□□□063C32 | E84AV□□□5514□□□ | 112 |
| 28                  | 116                 | - | 663              | 5.8              | 8.0           | 4.5 | 5.187  | GST04-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 25                  | 106                 | - | 607              | 6.5              | 9.0           | 2.2 | 5.667  | GST04-1M□□□063C32 | E84AV□□□5514□□□ | 112 |
| 25                  | 106                 | - | 607              | 6.5              | 9.0           | 3.2 | 5.667  | GST05-1M□□□063C32 | E84AV□□□5514□□□ | 112 |
| 22                  | 94                  | - | 538              | 7.2              | 10            | 3.9 | 6.400  | GST05-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 20                  | 84                  | - | 479              | 8.2              | 11            | 1.8 | 7.182  | GST04-1M□□□063C32 | E84AV□□□5514□□□ | 112 |
| 20                  | 82                  | - | 469              | 8.4              | 11            | 2.8 | 7.333  | GST05-1M□□□063C32 | E84AV□□□5514□□□ | 112 |
| 20                  | 82                  | - | 469              | 8.4              | 11            | 3.2 | 7.333  | GST06-1M□□□063C32 | E84AV□□□5514□□□ | 112 |
| 18                  | 74                  | - | 421              | 9.2              | 12            | 4.5 | 8.163  | GST05-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 16                  | 67                  | - | 387              | 10               | 13            | 2.4 | 8.900  | GST05-1M□□□063C32 | E84AV□□□5514□□□ | 112 |
| 16                  | 67                  | - | 387              | 10               | 13            | 2.8 | 8.900  | GST06-1M□□□063C32 | E84AV□□□5514□□□ | 112 |
| 16                  | 67                  | - | 385              | 10               | 13            | 1.9 | 8.935  | GST03-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 16                  | 67                  | - | 382              | 10               | 14            | 1.0 | 9.000  | GST04-1M□□□063C32 | E84AV□□□5514□□□ | 112 |
| 15                  | 61                  | - | 349              | 11               | 15            | 3.4 | 9.856  | GST04-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 14                  | 60                  | - | 343              | 11               | 15            | 1.8 | 10.033 | GST03-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 13                  | 54                  | - | 307              | 13               | 17            | 2.7 | 11.200 | GST04-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 13                  | 53                  | - | 306              | 13               | 17            | 2.2 | 11.250 | GST06-1M□□□063C32 | E84AV□□□5514□□□ | 112 |
| 13                  | 53                  | - | 302              | 13               | 17            | 1.2 | 11.375 | GST05-1M□□□063C32 | E84AV□□□5514□□□ | 112 |
| 13                  | 53                  | - | 301              | 13               | 17            | 1.6 | 11.429 | GST03-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 11                  | 48                  | - | 274              | 14               | 19            | 2.8 | 12.571 | GST04-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 11                  | 47                  | - | 268              | 14               | 19            | 1.5 | 12.833 | GST03-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 10                  | 42                  | - | 241              | 16               | 21            | 2.2 | 14.286 | GST04-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 10                  | 42                  | - | 240              | 16               | 21            | 3.2 | 14.356 | GST05-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 9.7                 | 40                  | - | 232              | 17               | 22            | 1.3 | 14.836 | GST03-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 9.3                 | 39                  | - | 223              | 17               | 23            | 2.6 | 15.400 | GST04-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 8.6                 | 36                  | - | 207              | 19               | 25            | 1.4 | 16.660 | GST03-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 8.2                 | 34                  | - | 197              | 20               | 26            | 2.1 | 17.500 | GST04-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 7.5                 | 32                  | - | 181              | 21               | 28            | 1.3 | 19.013 | GST03-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 7.4                 | 31                  | - | 178              | 22               | 29            | 2.1 | 19.360 | GST04-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 6.7                 | 28                  | - | 161              | 24               | 32            | 1.2 | 21.350 | GST03-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 6.5                 | 27                  | - | 156              | 25               | 33            | 1.6 | 22.000 | GST04-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 5.8                 | 24                  | - | 140              | 28               | 36            | 1.1 | 24.595 | GST03-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 5.8                 | 24                  | - | 138              | 28               | 37            | 1.7 | 24.933 | GST04-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 5.2                 | 22                  | - | 125              | 31               | 41            | 0.9 | 27.618 | GST03-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 5.1                 | 21                  | - | 121              | 32               | 42            | 1.3 | 28.333 | GST04-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 5.1                 | 21                  | - | 121              | 32               | 42            | 3.0 | 28.333 | GST05-2M□□□063C32 | E84AV□□□5514□□□ | 118 |



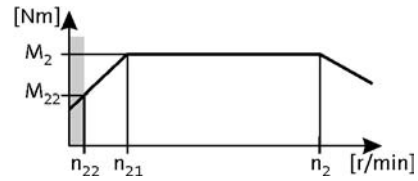
# GST

GST [Nm] - MF□MA

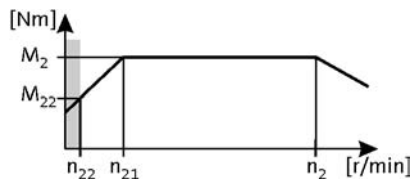
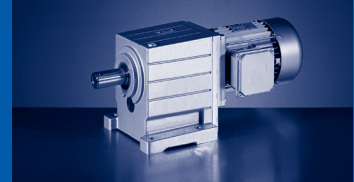
120 Hz:  $P_N = 0.55 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.3 \dots 3440 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 4.5      | 19       | - | 109     | 35       | 47    | 1.3 | 31.600  | GST04-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 4.4      | 19       | - | 107     | 36       | 48    | 3.0 | 32.267  | GST05-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 4.0      | 17       | - | 96      | 40       | 53    | 1.0 | 35.909  | GST04-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 4.0      | 17       | - | 95      | 40       | 53    | 2.2 | 36.267  | GST05-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 3.9      | 16       | - | 94      | 41       | 54    | 2.3 | 36.667  | GST05-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 3.7      | 15       | - | 88      | 44       | 58    | 2.5 | 39.160  | GST05-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 3.7      | 15       | - | 88      | 44       | 58    | 3.1 | 39.160  | GST06-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 3.6      | 15       | - | 87      | 44       | 59    | 1.1 | 39.600  | GST04-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 3.2      | 14       | - | 77      | 50       | 66    | 2.2 | 44.500  | GST05-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 3.2      | 13       | - | 76      | 51       | 67    | 0.9 | 45.000  | GST04-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 3.1      | 13       | - | 74      | 51       | 68    | 2.1 | 46.259  | GST05-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 2.9      | 12       | - | 70      | 56       | 73    | 2.8 | 49.500  | GST06-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 2.9      | 12       | - | 69      | 56       | 74    | 1.5 | 50.050  | GST05-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 2.5      | 11       | - | 61      | 64       | 84    | 1.5 | 56.875  | GST05-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 2.5      | 11       | - | 61      | 63       | 83    | 1.8 | 56.667  | GST05-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 2.6      | 11       | - | 61      | 63       | 83    | 2.8 | 56.250  | GST06-2M□□□063C32 | E84AV□□□5514□□□ | 118 |
| 2.3      | 9.5      | - | 54      | 70       | 93    | 1.5 | 63.467  | GST05-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 2.0      | 8.4      | - | 48      | 79       | 104   | 1.5 | 71.238  | GST05-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 1.8      | 7.4      | - | 43      | 89       | 118   | 1.2 | 80.952  | GST05-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 1.8      | 7.4      | - | 43      | 89       | 118   | 2.7 | 80.952  | GST06-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 1.6      | 6.9      | - | 39      | 96       | 127   | 2.8 | 87.267  | GST06-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 1.6      | 6.5      | - | 38      | 101      | 134   | 1.2 | 91.746  | GST05-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 1.5      | 6.1      | - | 35      | 110      | 145   | 1.0 | 99.167  | GST05-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 1.5      | 6.1      | - | 35      | 110      | 145   | 2.2 | 99.167  | GST06-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 1.3      | 5.5      | - | 31      | 121      | 160   | 2.2 | 109.707 | GST06-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 1.2      | 5.2      | - | 30      | 128      | 170   | 1.0 | 116.277 | GST05-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 1.2      | 4.8      | - | 28      | 138      | 182   | 1.8 | 124.667 | GST06-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 1.0      | 4.3      | - | 24      | 156      | 206   | 1.7 | 141.289 | GST06-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 0.9      | 3.8      | - | 22      | 175      | 231   | 2.9 | 158.194 | GST07-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 0.9      | 3.7      | - | 21      | 177      | 234   | 1.4 | 160.556 | GST06-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 0.8      | 3.4      | - | 19      | 198      | 261   | 1.4 | 179.067 | GST06-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 0.8      | 3.3      | - | 19      | 199      | 263   | 2.6 | 180.156 | GST07-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 0.7      | 3.0      | - | 17      | 225      | 297   | 1.1 | 203.485 | GST06-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 0.7      | 2.9      | - | 17      | 226      | 299   | 2.3 | 204.722 | GST07-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 0.6      | 2.6      | - | 15      | 256      | 338   | 1.1 | 231.733 | GST06-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 0.6      | 2.5      | - | 15      | 261      | 345   | 2.0 | 236.622 | GST07-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 0.6      | 2.4      | - | 14      | 274      | 363   | 1.9 | 248.458 | GST07-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 0.5      | 2.2      | - | 13      | 297      | 392   | 1.7 | 268.889 | GST07-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 0.4      | 1.8      | - | 11      | 360      | 476   | 1.4 | 326.333 | GST07-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 0.4      | 1.7      | - | 9.5     | 401      | 530   | 2.8 | 363.000 | GST09-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 0.4      | 1.6      | - | 9.4     | 405      | 536   | 1.3 | 367.033 | GST07-3M□□□063C32 | E84AV□□□5514□□□ | 124 |

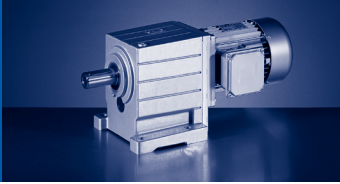


120 Hz:  $P_N = 0.55 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.3 \dots 3440 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 0.3      | 1.4      | - | 8.3     | 461      | 609   | 1.1 | 417.083 | GST07-3M□□□063C32 | E84AV□□□5514□□□ | 124 |
| 0.4      | 1.5      | - | 8.3     | 456      | 602   | 2.6 | 412.500 | GST09-3M□□□063C32 | E84AV□□□5514□□□ | 124 |



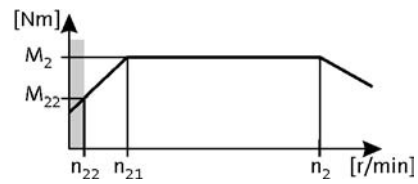
# GST

GST [Nm] - MF□MA

120 Hz:  $P_N = 0.75 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

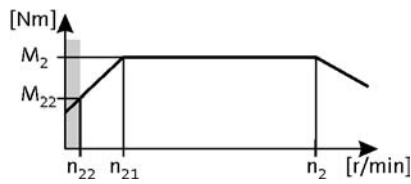
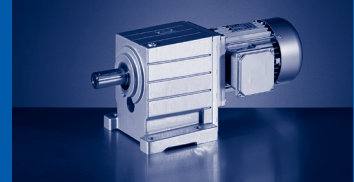
$n_1 = 141.7 \dots 3400 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 69       | 293      | - | 1661    | 3.2      | 4.0   | 3.3 | 2.048  | GST04-1M□□□063C42 | E84AV□□□7514□□□ | 112 |
| 63       | 268      | - | 1518    | 3.5      | 5.0   | 2.9 | 2.240  | GST05-1M□□□063C42 | E84AV□□□7514□□□ | 112 |
| 50       | 210      | - | 1190    | 4.4      | 6.0   | 3.0 | 2.857  | GST04-1M□□□063C42 | E84AV□□□7514□□□ | 112 |
| 41       | 171      | - | 971     | 5.4      | 7.0   | 2.6 | 3.500  | GST04-1M□□□063C42 | E84AV□□□7514□□□ | 112 |
| 32       | 137      | - | 778     | 6.7      | 9.0   | 1.8 | 4.368  | GST03-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 32       | 136      | - | 773     | 6.8      | 9.0   | 2.1 | 4.400  | GST04-1M□□□063C42 | E84AV□□□7514□□□ | 112 |
| 31       | 132      | - | 746     | 7.1      | 10    | 2.7 | 4.556  | GST05-1M□□□063C42 | E84AV□□□7514□□□ | 112 |
| 27       | 116      | - | 655     | 7.9      | 11    | 3.3 | 5.187  | GST04-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 25       | 106      | - | 600     | 8.8      | 12    | 1.6 | 5.667  | GST04-1M□□□063C42 | E84AV□□□7514□□□ | 112 |
| 25       | 106      | - | 600     | 8.8      | 12    | 2.3 | 5.667  | GST05-1M□□□063C42 | E84AV□□□7514□□□ | 112 |
| 22       | 94       | - | 531     | 9.8      | 13    | 2.9 | 6.400  | GST05-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 22       | 94       | - | 531     | 9.8      | 13    | 3.2 | 6.400  | GST04-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 20       | 84       | - | 473     | 11       | 15    | 1.3 | 7.182  | GST04-1M□□□063C42 | E84AV□□□7514□□□ | 112 |
| 19       | 82       | - | 464     | 11       | 15    | 2.1 | 7.333  | GST05-1M□□□063C42 | E84AV□□□7514□□□ | 112 |
| 19       | 82       | - | 464     | 11       | 15    | 2.3 | 7.333  | GST06-1M□□□063C42 | E84AV□□□7514□□□ | 112 |
| 17       | 74       | - | 417     | 13       | 17    | 3.3 | 8.163  | GST05-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 16       | 67       | - | 382     | 14       | 19    | 1.7 | 8.900  | GST05-1M□□□063C42 | E84AV□□□7514□□□ | 112 |
| 16       | 67       | - | 382     | 14       | 19    | 2.0 | 8.900  | GST06-1M□□□063C42 | E84AV□□□7514□□□ | 112 |
| 16       | 67       | - | 381     | 14       | 18    | 1.4 | 8.935  | GST03-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 16       | 67       | - | 377     | 14       | 18    | 2.6 | 9.010  | GST04-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 14       | 61       | - | 345     | 15       | 20    | 2.4 | 9.856  | GST04-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 14       | 60       | - | 339     | 15       | 21    | 1.3 | 10.033 | GST03-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 13       | 54       | - | 304     | 17       | 23    | 2.0 | 11.200 | GST04-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 13       | 54       | - | 304     | 17       | 23    | 2.9 | 11.200 | GST05-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 13       | 53       | - | 302     | 18       | 23    | 1.6 | 11.250 | GST06-1M□□□063C42 | E84AV□□□7514□□□ | 112 |
| 12       | 53       | - | 298     | 18       | 23    | 1.2 | 11.429 | GST03-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 11       | 48       | - | 271     | 19       | 26    | 2.0 | 12.571 | GST04-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 11       | 47       | - | 265     | 20       | 26    | 1.1 | 12.833 | GST03-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 11       | 46       | - | 261     | 20       | 27    | 2.7 | 13.016 | GST05-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 9.9      | 42       | - | 238     | 22       | 29    | 1.6 | 14.286 | GST04-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 9.9      | 42       | - | 237     | 22       | 29    | 2.3 | 14.356 | GST05-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 9.6      | 40       | - | 229     | 23       | 30    | 1.0 | 14.836 | GST03-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 9.2      | 39       | - | 221     | 24       | 32    | 1.9 | 15.400 | GST04-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 8.8      | 37       | - | 210     | 25       | 33    | 2.6 | 16.190 | GST05-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 8.5      | 36       | - | 204     | 26       | 34    | 1.0 | 16.660 | GST03-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 8.1      | 34       | - | 194     | 27       | 36    | 1.5 | 17.500 | GST04-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 7.5      | 32       | - | 179     | 29       | 39    | 0.9 | 19.013 | GST03-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 7.3      | 31       | - | 176     | 30       | 40    | 1.5 | 19.360 | GST04-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 7.1      | 30       | - | 170     | 31       | 41    | 3.1 | 20.044 | GST05-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 6.4      | 27       | - | 155     | 34       | 45    | 1.2 | 22.000 | GST04-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 6.2      | 26       | - | 149     | 35       | 47    | 2.7 | 22.778 | GST05-2M□□□063C42 | E84AV□□□7514□□□ | 118 |

3



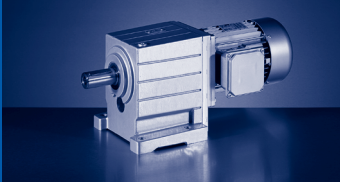


120 Hz:  $P_N = 0.75 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 141.7 \dots 3400 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i       |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|---------|-------------------|-----------------|-----|
| 5.7                 | 24                  | - | 136              | 38               | 51            | 1.2 | 24.933  | GST04-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 5.7                 | 24                  | - | 136              | 38               | 51            | 2.6 | 24.933  | GST05-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 5.0                 | 21                  | - | 120              | 43               | 58            | 0.9 | 28.333  | GST04-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 5.0                 | 21                  | - | 120              | 43               | 58            | 2.2 | 28.333  | GST05-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 4.5                 | 19                  | - | 108              | 48               | 65            | 1.0 | 31.600  | GST04-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 4.4                 | 19                  | - | 105              | 49               | 66            | 2.2 | 32.267  | GST05-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 4.4                 | 19                  | - | 105              | 49               | 66            | 2.6 | 32.267  | GST06-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 3.9                 | 17                  | - | 94               | 55               | 73            | 1.6 | 36.267  | GST05-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 3.9                 | 16                  | - | 93               | 56               | 75            | 1.7 | 36.667  | GST05-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 3.9                 | 16                  | - | 93               | 56               | 75            | 2.6 | 36.667  | GST06-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 3.6                 | 15                  | - | 87               | 60               | 80            | 1.8 | 39.160  | GST05-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 3.6                 | 15                  | - | 87               | 60               | 80            | 2.3 | 39.160  | GST06-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 3.2                 | 14                  | - | 76               | 68               | 91            | 1.6 | 44.500  | GST05-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 3.2                 | 14                  | - | 76               | 68               | 91            | 2.5 | 44.500  | GST06-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 3.1                 | 13                  | - | 74               | 70               | 93            | 1.5 | 46.259  | GST05-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 2.9                 | 12                  | - | 69               | 76               | 101           | 2.0 | 49.500  | GST06-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 2.8                 | 12                  | - | 68               | 77               | 102           | 1.1 | 50.050  | GST05-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 2.8                 | 12                  | - | 67               | 77               | 103           | 3.0 | 51.022  | GST06-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 2.6                 | 11                  | - | 63               | 81               | 109           | 3.1 | 53.900  | GST06-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 2.5                 | 11                  | - | 60               | 87               | 116           | 1.1 | 56.875  | GST05-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 2.5                 | 11                  | - | 60               | 85               | 114           | 1.3 | 56.667  | GST05-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 2.5                 | 11                  | - | 60               | 86               | 115           | 2.0 | 56.250  | GST06-2M□□□063C42 | E84AV□□□7514□□□ | 118 |
| 2.2                 | 9.5                 | - | 54               | 96               | 128           | 1.1 | 63.467  | GST05-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 2.1                 | 8.9                 | - | 50               | 102              | 136           | 2.6 | 67.760  | GST06-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 2.0                 | 8.6                 | - | 49               | 106              | 141           | 2.4 | 70.156  | GST06-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 2.0                 | 8.4                 | - | 48               | 107              | 143           | 1.1 | 71.238  | GST05-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 1.8                 | 7.4                 | - | 42               | 122              | 163           | 2.0 | 80.952  | GST06-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 1.6                 | 6.9                 | - | 39               | 131              | 176           | 2.0 | 87.267  | GST06-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 1.4                 | 6.1                 | - | 34               | 149              | 200           | 1.6 | 99.167  | GST06-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 1.3                 | 5.5                 | - | 31               | 165              | 221           | 1.6 | 109.707 | GST06-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 1.3                 | 5.4                 | - | 30               | 169              | 225           | 3.0 | 111.915 | GST07-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 1.1                 | 4.8                 | - | 27               | 188              | 251           | 1.3 | 124.667 | GST06-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 1.1                 | 4.7                 | - | 27               | 192              | 256           | 2.7 | 127.176 | GST07-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 1.0                 | 4.3                 | - | 24               | 213              | 284           | 1.3 | 141.289 | GST06-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 1.0                 | 4.3                 | - | 24               | 210              | 280           | 2.4 | 139.211 | GST07-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 0.9                 | 3.8                 | - | 22               | 238              | 319           | 2.1 | 158.194 | GST07-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 0.9                 | 3.7                 | - | 21               | 242              | 323           | 1.0 | 160.556 | GST06-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 0.8                 | 3.4                 | - | 19               | 270              | 361           | 1.0 | 179.067 | GST06-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 0.8                 | 3.3                 | - | 19               | 271              | 363           | 1.9 | 180.156 | GST07-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 0.8                 | 3.3                 | - | 19               | 275              | 368           | 2.9 | 182.844 | GST09-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 0.7                 | 2.9                 | - | 17               | 308              | 412           | 1.7 | 204.722 | GST07-3M□□□063C42 | E84AV□□□7514□□□ | 124 |



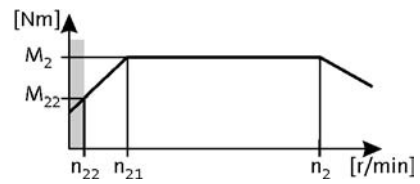
# GST

GST [Nm] - MF□MA

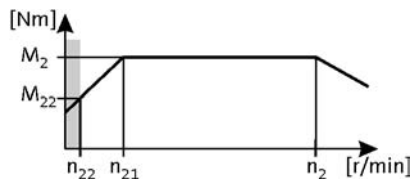
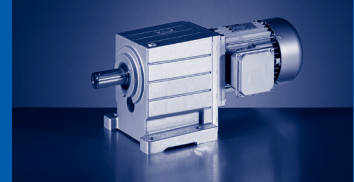
120 Hz:  $P_N = 0.75 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 141.7 \dots 3400 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 0.7      | 2.9      | - | 16      | 313      | 418   | 2.9 | 207.778 | GST09-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 0.6      | 2.5      | - | 14      | 356      | 476   | 1.4 | 236.622 | GST07-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 0.6      | 2.4      | - | 14      | 374      | 500   | 1.4 | 248.458 | GST07-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 0.6      | 2.4      | - | 14      | 380      | 508   | 2.5 | 252.167 | GST09-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 0.6      | 2.5      | - | 14      | 356      | 476   | 2.9 | 236.622 | GST09-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 0.5      | 2.2      | - | 13      | 405      | 541   | 1.3 | 268.889 | GST07-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 0.5      | 2.2      | - | 13      | 405      | 541   | 2.9 | 268.889 | GST09-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 0.4      | 1.8      | - | 10      | 491      | 657   | 1.0 | 326.333 | GST07-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 0.4      | 1.8      | - | 10      | 491      | 657   | 2.4 | 326.333 | GST09-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 0.4      | 1.7      | - | 9.4     | 547      | 731   | 2.0 | 363.000 | GST09-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 0.4      | 1.6      | - | 9.3     | 553      | 739   | 0.9 | 367.033 | GST07-3M□□□063C42 | E84AV□□□7514□□□ | 124 |
| 0.3      | 1.5      | - | 8.2     | 621      | 830   | 1.9 | 412.500 | GST09-3M□□□063C42 | E84AV□□□7514□□□ | 124 |

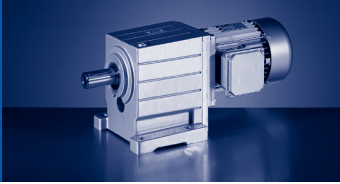


120 Hz:  $P_N = 1.10 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.4 \dots 3490 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i      |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|--------|-------------------|-----------------|-----|
| 71                  | 293                 | - | 1704             | 4.7              | 6.0           | 2.8 | 2.048  | GST04-1M□□□071C32 | E84AV□□□1124□□□ | 112 |
| 65                  | 268                 | - | 1558             | 5.1              | 7.0           | 2.8 | 2.240  | GST04-1M□□□071C32 | E84AV□□□1124□□□ | 112 |
| 51                  | 210                 | - | 1222             | 6.5              | 9.0           | 2.2 | 2.857  | GST04-1M□□□071C32 | E84AV□□□1124□□□ | 112 |
| 42                  | 171                 | - | 997              | 8.0              | 10            | 1.8 | 3.500  | GST04-1M□□□071C32 | E84AV□□□1124□□□ | 112 |
| 33                  | 136                 | - | 793              | 10               | 13            | 1.4 | 4.400  | GST04-1M□□□071C32 | E84AV□□□1124□□□ | 112 |
| 32                  | 132                 | - | 766              | 10               | 14            | 3.0 | 4.556  | GST05-1M□□□071C32 | E84AV□□□1124□□□ | 112 |
| 28                  | 116                 | - | 673              | 12               | 15            | 2.5 | 5.187  | GST04-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 26                  | 106                 | - | 616              | 13               | 17            | 1.1 | 5.667  | GST04-1M□□□071C32 | E84AV□□□1124□□□ | 112 |
| 26                  | 106                 | - | 616              | 13               | 17            | 2.4 | 5.667  | GST05-1M□□□071C32 | E84AV□□□1124□□□ | 112 |
| 26                  | 106                 | - | 616              | 13               | 17            | 3.0 | 5.667  | GST06-1M□□□071C32 | E84AV□□□1124□□□ | 112 |
| 25                  | 103                 | - | 597              | 13               | 17            | 2.4 | 5.850  | GST04-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 23                  | 94                  | - | 545              | 14               | 19            | 2.2 | 6.400  | GST04-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 20                  | 82                  | - | 476              | 17               | 22            | 1.6 | 7.333  | GST05-1M□□□071C32 | E84AV□□□1124□□□ | 112 |
| 20                  | 82                  | - | 476              | 17               | 22            | 2.7 | 7.333  | GST06-1M□□□071C32 | E84AV□□□1124□□□ | 112 |
| 18                  | 74                  | - | 428              | 18               | 24            | 3.6 | 8.163  | GST05-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 16                  | 67                  | - | 392              | 20               | 26            | 1.2 | 8.900  | GST05-1M□□□071C32 | E84AV□□□1124□□□ | 112 |
| 16                  | 67                  | - | 392              | 20               | 26            | 2.2 | 8.900  | GST06-1M□□□071C32 | E84AV□□□1124□□□ | 112 |
| 16                  | 67                  | - | 387              | 20               | 26            | 1.8 | 9.010  | GST04-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 15                  | 61                  | - | 354              | 22               | 29            | 1.7 | 9.856  | GST04-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 15                  | 60                  | - | 349              | 22               | 29            | 3.2 | 10.000 | GST05-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 13                  | 54                  | - | 312              | 25               | 33            | 1.4 | 11.200 | GST04-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 13                  | 54                  | - | 312              | 25               | 33            | 2.9 | 11.200 | GST05-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 13                  | 53                  | - | 310              | 26               | 33            | 1.3 | 11.250 | GST06-1M□□□071C32 | E84AV□□□1124□□□ | 112 |
| 12                  | 48                  | - | 278              | 28               | 37            | 1.4 | 12.571 | GST04-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 11                  | 46                  | - | 268              | 29               | 38            | 2.7 | 13.016 | GST05-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 10                  | 42                  | - | 244              | 32               | 42            | 1.1 | 14.286 | GST04-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 10                  | 42                  | - | 243              | 32               | 42            | 2.5 | 14.356 | GST05-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 9.4                 | 39                  | - | 227              | 35               | 45            | 1.3 | 15.400 | GST04-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 9.0                 | 37                  | - | 216              | 36               | 47            | 2.7 | 16.190 | GST05-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 8.3                 | 34                  | - | 199              | 39               | 51            | 1.0 | 17.500 | GST04-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 8.3                 | 34                  | - | 199              | 39               | 51            | 2.4 | 17.500 | GST05-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 7.5                 | 31                  | - | 180              | 43               | 57            | 1.1 | 19.360 | GST04-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 7.3                 | 30                  | - | 174              | 45               | 59            | 2.3 | 20.044 | GST05-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 6.4                 | 26                  | - | 153              | 51               | 67            | 1.9 | 22.778 | GST05-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 5.8                 | 24                  | - | 140              | 56               | 73            | 1.9 | 24.933 | GST05-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 5.1                 | 21                  | - | 123              | 64               | 83            | 1.5 | 28.333 | GST05-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 4.5                 | 19                  | - | 108              | 72               | 94            | 1.5 | 32.267 | GST05-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 4.5                 | 19                  | - | 108              | 72               | 94            | 3.1 | 32.267 | GST06-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 4.0                 | 17                  | - | 96               | 80               | 104           | 1.1 | 36.267 | GST05-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 4.0                 | 16                  | - | 95               | 82               | 107           | 1.2 | 36.667 | GST05-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 4.0                 | 16                  | - | 95               | 82               | 107           | 2.6 | 36.667 | GST06-2M□□□071C32 | E84AV□□□1124□□□ | 118 |



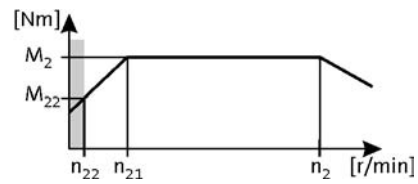
# GST

GST [Nm] - MF□MA

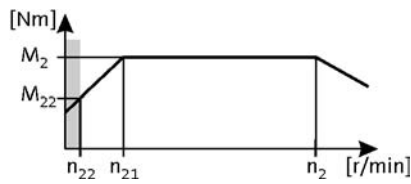
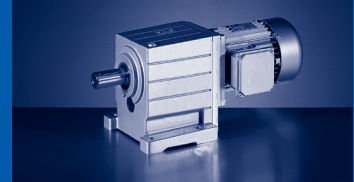
120 Hz:  $P_N = 1.10 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.4 \dots 3490 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 3.7      | 15       | - | 89      | 88       | 114   | 1.2 | 39.160  | GST05-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 3.7      | 15       | - | 89      | 87       | 113   | 2.4 | 39.200  | GST06-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 3.7      | 15       | - | 89      | 88       | 114   | 2.5 | 39.160  | GST06-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 3.3      | 14       | - | 79      | 97       | 127   | 2.5 | 44.000  | GST06-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 3.3      | 14       | - | 78      | 100      | 130   | 1.1 | 44.500  | GST05-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 3.3      | 14       | - | 78      | 100      | 130   | 2.4 | 44.500  | GST06-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 3.1      | 13       | - | 75      | 102      | 133   | 1.0 | 46.259  | GST05-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 2.9      | 12       | - | 71      | 111      | 145   | 1.6 | 49.500  | GST06-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 2.9      | 12       | - | 68      | 113      | 147   | 2.1 | 51.022  | GST06-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 2.7      | 11       | - | 65      | 119      | 155   | 2.1 | 53.900  | GST06-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 2.6      | 11       | - | 62      | 125      | 163   | 0.9 | 56.667  | GST05-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 2.6      | 11       | - | 62      | 126      | 164   | 1.6 | 56.250  | GST06-2M□□□071C32 | E84AV□□□1124□□□ | 118 |
| 2.2      | 8.9      | - | 52      | 150      | 195   | 1.8 | 67.760  | GST06-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 2.1      | 8.6      | - | 50      | 155      | 202   | 1.7 | 70.156  | GST06-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 1.8      | 7.5      | - | 44      | 176      | 229   | 2.9 | 79.762  | GST07-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 1.8      | 7.4      | - | 43      | 179      | 233   | 1.4 | 80.952  | GST06-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 1.7      | 7.0      | - | 41      | 190      | 247   | 2.7 | 85.983  | GST07-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 1.7      | 6.9      | - | 40      | 193      | 251   | 1.4 | 87.267  | GST06-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 1.5      | 6.1      | - | 36      | 216      | 281   | 2.4 | 97.708  | GST07-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 1.5      | 6.1      | - | 35      | 219      | 285   | 1.1 | 99.167  | GST06-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 1.3      | 5.5      | - | 32      | 242      | 316   | 1.1 | 109.707 | GST06-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 1.3      | 5.4      | - | 31      | 247      | 322   | 2.1 | 111.915 | GST07-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 1.1      | 4.7      | - | 27      | 281      | 366   | 1.8 | 127.176 | GST07-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 1.0      | 4.3      | - | 25      | 308      | 400   | 1.7 | 139.211 | GST07-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 0.9      | 3.8      | - | 22      | 349      | 455   | 1.5 | 158.194 | GST07-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 0.8      | 3.3      | - | 19      | 398      | 518   | 1.3 | 180.156 | GST07-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 0.8      | 3.3      | - | 19      | 404      | 526   | 2.9 | 182.844 | GST09-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 0.7      | 2.9      | - | 17      | 452      | 589   | 1.1 | 204.722 | GST07-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 0.7      | 2.9      | - | 17      | 459      | 598   | 2.6 | 207.778 | GST09-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 0.6      | 2.5      | - | 15      | 523      | 681   | 1.0 | 236.622 | GST07-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 0.6      | 2.5      | - | 15      | 523      | 681   | 2.3 | 236.622 | GST09-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 0.6      | 2.4      | - | 14      | 549      | 715   | 0.9 | 248.458 | GST07-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 0.6      | 2.4      | - | 14      | 557      | 725   | 2.1 | 252.167 | GST09-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 0.5      | 2.2      | - | 13      | 594      | 773   | 2.0 | 268.889 | GST09-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 0.5      | 1.8      | - | 11      | 721      | 939   | 1.6 | 326.333 | GST09-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 0.4      | 1.7      | - | 9.6     | 802      | 1044  | 1.5 | 363.000 | GST09-3M□□□071C32 | E84AV□□□1124□□□ | 124 |
| 0.4      | 1.5      | - | 8.5     | 911      | 1187  | 1.3 | 412.500 | GST09-3M□□□071C32 | E84AV□□□1124□□□ | 124 |

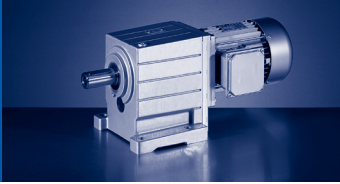


120 Hz:  $P_N = 1.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.8 \dots 3450 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i      |                   |                 |     |
|---------------------|---------------------|------------------|------------------|---------------|-----|--------|-------------------|-----------------|-----|
| 70                  | 293                 | - 1685           | 6.4              | 8.0           | 2.1 | 2.048  | GST04-1M□□□071C42 | E84AV□□□1524□□□ | 112 |
| 70                  | 293                 | - 1685           | 6.4              | 8.0           | 3.1 | 2.048  | GST05-1M□□□071C42 | E84AV□□□1524□□□ | 112 |
| 64                  | 268                 | - 1540           | 7.0              | 9.0           | 2.0 | 2.240  | GST04-1M□□□071C42 | E84AV□□□1524□□□ | 112 |
| 64                  | 268                 | - 1540           | 7.0              | 9.0           | 3.1 | 2.240  | GST05-1M□□□071C42 | E84AV□□□1524□□□ | 112 |
| 50                  | 210                 | - 1208           | 8.9              | 12            | 1.6 | 2.857  | GST04-1M□□□071C42 | E84AV□□□1524□□□ | 112 |
| 50                  | 210                 | - 1208           | 8.9              | 12            | 2.9 | 2.857  | GST05-1M□□□071C42 | E84AV□□□1524□□□ | 112 |
| 50                  | 210                 | - 1208           | 8.9              | 12            | 3.1 | 2.857  | GST06-1M□□□071C42 | E84AV□□□1524□□□ | 112 |
| 41                  | 171                 | - 986            | 11               | 14            | 1.3 | 3.500  | GST04-1M□□□071C42 | E84AV□□□1524□□□ | 112 |
| 41                  | 171                 | - 986            | 11               | 14            | 2.6 | 3.500  | GST05-1M□□□071C42 | E84AV□□□1524□□□ | 112 |
| 33                  | 136                 | - 784            | 14               | 18            | 1.1 | 4.400  | GST04-1M□□□071C42 | E84AV□□□1524□□□ | 112 |
| 32                  | 132                 | - 757            | 14               | 19            | 2.2 | 4.556  | GST05-1M□□□071C42 | E84AV□□□1524□□□ | 112 |
| 32                  | 132                 | - 757            | 14               | 19            | 2.6 | 4.556  | GST06-1M□□□071C42 | E84AV□□□1524□□□ | 112 |
| 28                  | 116                 | - 665            | 16               | 21            | 1.8 | 5.187  | GST04-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 28                  | 116                 | - 665            | 16               | 21            | 3.1 | 5.187  | GST05-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 25                  | 106                 | - 609            | 18               | 23            | 1.8 | 5.667  | GST05-1M□□□071C42 | E84AV□□□1524□□□ | 112 |
| 25                  | 106                 | - 609            | 18               | 23            | 2.2 | 5.667  | GST06-1M□□□071C42 | E84AV□□□1524□□□ | 112 |
| 25                  | 103                 | - 590            | 18               | 24            | 1.7 | 5.850  | GST04-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 25                  | 103                 | - 590            | 18               | 24            | 3.1 | 5.850  | GST05-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 23                  | 94                  | - 539            | 20               | 26            | 1.6 | 6.400  | GST04-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 23                  | 94                  | - 539            | 20               | 26            | 3.1 | 6.400  | GST05-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 20                  | 83                  | - 477            | 22               | 29            | 2.8 | 7.238  | GST05-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 20                  | 82                  | - 471            | 23               | 30            | 1.2 | 7.333  | GST05-1M□□□071C42 | E84AV□□□1524□□□ | 112 |
| 20                  | 82                  | - 471            | 23               | 30            | 2.0 | 7.333  | GST06-1M□□□071C42 | E84AV□□□1524□□□ | 112 |
| 18                  | 74                  | - 423            | 25               | 33            | 2.7 | 8.163  | GST05-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 18                  | 74                  | - 423            | 25               | 33            | 3.1 | 8.163  | GST06-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 16                  | 67                  | - 388            | 28               | 36            | 1.6 | 8.900  | GST06-1M□□□071C42 | E84AV□□□1524□□□ | 112 |
| 16                  | 67                  | - 383            | 28               | 36            | 1.3 | 9.010  | GST04-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 16                  | 67                  | - 383            | 28               | 36            | 2.5 | 9.010  | GST05-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 15                  | 61                  | - 350            | 30               | 40            | 1.2 | 9.856  | GST04-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 14                  | 60                  | - 345            | 31               | 40            | 2.3 | 10.000 | GST05-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 13                  | 54                  | - 308            | 34               | 45            | 1.0 | 11.200 | GST04-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 13                  | 54                  | - 308            | 34               | 45            | 2.1 | 11.200 | GST05-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 13                  | 53                  | - 307            | 35               | 46            | 0.9 | 11.250 | GST06-1M□□□071C42 | E84AV□□□1524□□□ | 112 |
| 11                  | 48                  | - 274            | 38               | 51            | 1.0 | 12.571 | GST04-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 11                  | 48                  | - 274            | 38               | 51            | 3.1 | 12.571 | GST06-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 11                  | 46                  | - 265            | 40               | 52            | 2.0 | 13.016 | GST05-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 10                  | 42                  | - 242            | 44               | 58            | 3.1 | 14.286 | GST06-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 10                  | 42                  | - 240            | 44               | 58            | 1.8 | 14.356 | GST05-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 9.3                 | 39                  | - 224            | 47               | 62            | 1.0 | 15.400 | GST04-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 8.9                 | 37                  | - 213            | 50               | 65            | 2.0 | 16.190 | GST05-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 8.2                 | 34                  | - 197            | 54               | 71            | 1.7 | 17.500 | GST05-2M□□□071C42 | E84AV□□□1524□□□ | 118 |



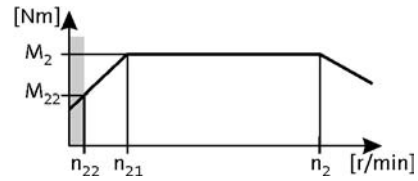
# GST

GST [Nm] - MF□MA

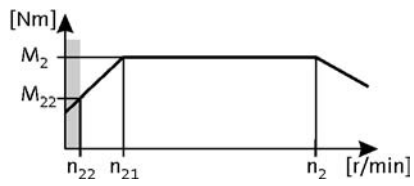
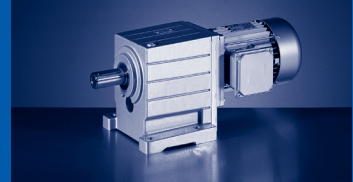
120 Hz:  $P_N = 1.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.8 \dots 3450 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 7.2      | 30       | - | 172     | 61       | 81    | 1.7 | 20.044  | GST05-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 7.2      | 30       | - | 172     | 61       | 81    | 2.9 | 20.044  | GST06-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 6.3      | 26       | - | 152     | 70       | 92    | 1.4 | 22.778  | GST05-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 6.3      | 26       | - | 152     | 70       | 92    | 2.9 | 22.778  | GST06-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 5.8      | 24       | - | 138     | 76       | 100   | 1.4 | 24.933  | GST05-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 5.8      | 24       | - | 138     | 76       | 100   | 2.4 | 24.933  | GST06-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 5.1      | 21       | - | 122     | 87       | 114   | 1.1 | 28.333  | GST05-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 5.1      | 21       | - | 122     | 87       | 114   | 2.4 | 28.333  | GST06-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 4.5      | 19       | - | 107     | 99       | 130   | 1.1 | 32.267  | GST05-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 4.5      | 19       | - | 107     | 99       | 130   | 2.2 | 32.267  | GST06-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 3.9      | 16       | - | 94      | 112      | 148   | 1.9 | 36.667  | GST06-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 3.7      | 15       | - | 88      | 120      | 158   | 0.9 | 39.160  | GST05-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 3.7      | 15       | - | 88      | 120      | 158   | 1.8 | 39.160  | GST06-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 3.7      | 15       | - | 88      | 118      | 156   | 1.8 | 39.200  | GST06-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 3.2      | 14       | - | 78      | 136      | 179   | 1.7 | 44.500  | GST06-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 3.3      | 14       | - | 78      | 133      | 175   | 1.8 | 44.000  | GST06-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 3.3      | 14       | - | 78      | 133      | 175   | 3.2 | 44.000  | GST07-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 2.9      | 12       | - | 70      | 151      | 199   | 1.2 | 49.500  | GST06-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 2.8      | 12       | - | 68      | 154      | 202   | 1.5 | 51.022  | GST06-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 2.7      | 11       | - | 64      | 162      | 214   | 1.6 | 53.900  | GST06-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 2.7      | 11       | - | 64      | 162      | 214   | 3.2 | 53.900  | GST07-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 2.6      | 11       | - | 61      | 172      | 227   | 1.2 | 56.250  | GST06-2M□□□071C42 | E84AV□□□1524□□□ | 118 |
| 2.2      | 9.2      | - | 53      | 196      | 258   | 2.6 | 65.079  | GST07-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 2.1      | 8.9      | - | 51      | 204      | 269   | 1.3 | 67.760  | GST06-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 2.1      | 8.6      | - | 49      | 211      | 278   | 1.2 | 70.156  | GST06-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 2.1      | 8.6      | - | 49      | 211      | 278   | 2.4 | 70.156  | GST07-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 1.8      | 7.4      | - | 43      | 244      | 321   | 1.0 | 80.952  | GST06-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 1.8      | 7.5      | - | 43      | 240      | 317   | 2.1 | 79.762  | GST07-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 1.7      | 6.9      | - | 40      | 263      | 346   | 1.0 | 87.267  | GST06-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 1.7      | 7.0      | - | 40      | 259      | 341   | 2.0 | 85.983  | GST07-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 1.5      | 6.4      | - | 37      | 282      | 371   | 3.2 | 93.541  | GST09-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 1.5      | 6.1      | - | 35      | 294      | 388   | 1.7 | 97.708  | GST07-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 1.3      | 5.4      | - | 31      | 337      | 444   | 1.5 | 111.915 | GST07-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 1.3      | 5.3      | - | 30      | 342      | 451   | 3.2 | 113.585 | GST09-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 1.1      | 4.7      | - | 27      | 383      | 505   | 1.3 | 127.176 | GST07-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 1.1      | 4.7      | - | 27      | 389      | 512   | 3.0 | 129.074 | GST09-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 1.0      | 4.3      | - | 25      | 419      | 552   | 1.2 | 139.211 | GST07-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 1.0      | 4.3      | - | 24      | 426      | 561   | 2.7 | 141.289 | GST09-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 0.9      | 3.8      | - | 22      | 476      | 628   | 1.1 | 158.194 | GST07-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 0.9      | 3.7      | - | 22      | 484      | 637   | 2.4 | 160.556 | GST09-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 0.8      | 3.3      | - | 19      | 543      | 715   | 0.9 | 180.156 | GST07-3M□□□071C42 | E84AV□□□1524□□□ | 124 |

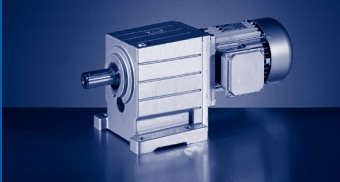


120 Hz:  $P_N = 1.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.8 \dots 3450 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 0.8      | 3.3      | - | 19      | 551      | 726   | 2.1 | 182.844 | GST09-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 0.7      | 2.9      | - | 17      | 626      | 824   | 1.9 | 207.778 | GST09-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 0.6      | 2.5      | - | 15      | 713      | 939   | 1.6 | 236.622 | GST09-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 0.6      | 2.4      | - | 14      | 760      | 1001  | 1.5 | 252.167 | GST09-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 0.5      | 2.2      | - | 13      | 810      | 1067  | 1.5 | 268.889 | GST09-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 0.4      | 1.8      | - | 11      | 983      | 1295  | 1.2 | 326.333 | GST09-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 0.4      | 1.7      | - | 9.5     | 1093     | 1440  | 1.1 | 363.000 | GST09-3M□□□071C42 | E84AV□□□1524□□□ | 124 |
| 0.4      | 1.5      | - | 8.4     | 1242     | 1637  | 0.9 | 412.500 | GST09-3M□□□071C42 | E84AV□□□1524□□□ | 124 |



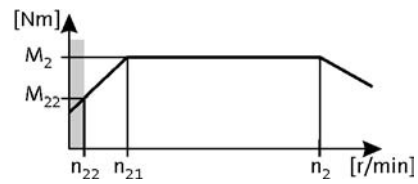
# GST

GST [Nm] - MF□MA

120 Hz:  $P_N = 2.20 \text{ kW}$

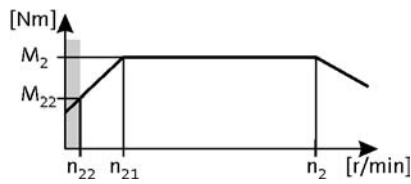
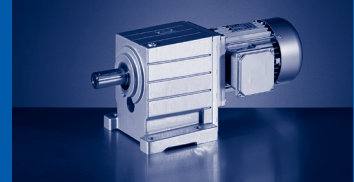
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.8 \dots 3500 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 71       | 293      | - | 1709    | 9.1      | 12    | 1.4 | 2.048  | GST04-1M□□□080C32 | E84AV□□□2224□□□ | 112 |
| 65       | 268      | - | 1563    | 9.9      | 13    | 1.4 | 2.240  | GST04-1M□□□080C32 | E84AV□□□2224□□□ | 112 |
| 65       | 268      | - | 1563    | 9.9      | 13    | 3.0 | 2.240  | GST05-1M□□□080C32 | E84AV□□□2224□□□ | 112 |
| 51       | 210      | - | 1225    | 13       | 17    | 1.1 | 2.857  | GST04-1M□□□080C32 | E84AV□□□2224□□□ | 112 |
| 51       | 210      | - | 1225    | 13       | 17    | 2.4 | 2.857  | GST05-1M□□□080C32 | E84AV□□□2224□□□ | 112 |
| 42       | 171      | - | 1000    | 16       | 21    | 0.9 | 3.500  | GST04-1M□□□080C32 | E84AV□□□2224□□□ | 112 |
| 42       | 171      | - | 1000    | 16       | 21    | 2.0 | 3.500  | GST05-1M□□□080C32 | E84AV□□□2224□□□ | 112 |
| 32       | 132      | - | 768     | 20       | 27    | 1.5 | 4.556  | GST05-1M□□□080C32 | E84AV□□□2224□□□ | 112 |
| 32       | 132      | - | 768     | 20       | 27    | 2.9 | 4.556  | GST06-1M□□□080C32 | E84AV□□□2224□□□ | 112 |
| 28       | 116      | - | 675     | 23       | 30    | 1.2 | 5.187  | GST04-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 28       | 116      | - | 675     | 23       | 30    | 2.2 | 5.187  | GST05-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 26       | 108      | - | 627     | 25       | 33    | 2.9 | 5.583  | GST07-1M□□□080C32 | E84AV□□□2224□□□ | 112 |
| 26       | 106      | - | 618     | 25       | 34    | 1.2 | 5.667  | GST05-1M□□□080C32 | E84AV□□□2224□□□ | 112 |
| 26       | 106      | - | 618     | 25       | 34    | 2.4 | 5.667  | GST06-1M□□□080C32 | E84AV□□□2224□□□ | 112 |
| 25       | 103      | - | 598     | 26       | 34    | 1.2 | 5.850  | GST04-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 25       | 103      | - | 598     | 26       | 34    | 2.2 | 5.850  | GST05-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 23       | 94       | - | 547     | 28       | 37    | 1.1 | 6.400  | GST04-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 23       | 94       | - | 547     | 28       | 37    | 2.1 | 6.400  | GST05-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 20       | 83       | - | 484     | 32       | 42    | 1.9 | 7.238  | GST05-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 20       | 82       | - | 477     | 33       | 43    | 1.7 | 7.333  | GST06-1M□□□080C32 | E84AV□□□2224□□□ | 112 |
| 20       | 82       | - | 477     | 33       | 43    | 2.7 | 7.333  | GST07-1M□□□080C32 | E84AV□□□2224□□□ | 112 |
| 18       | 74       | - | 429     | 36       | 48    | 1.8 | 8.163  | GST05-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 16       | 67       | - | 393     | 39       | 53    | 1.2 | 8.900  | GST06-1M□□□080C32 | E84AV□□□2224□□□ | 112 |
| 16       | 67       | - | 393     | 39       | 53    | 2.2 | 8.900  | GST07-1M□□□080C32 | E84AV□□□2224□□□ | 112 |
| 16       | 67       | - | 389     | 39       | 53    | 0.9 | 9.010  | GST04-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 16       | 67       | - | 389     | 39       | 53    | 1.7 | 9.010  | GST05-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 15       | 60       | - | 350     | 44       | 58    | 1.6 | 10.000 | GST05-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 13       | 54       | - | 313     | 49       | 65    | 1.5 | 11.200 | GST05-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 13       | 54       | - | 313     | 49       | 65    | 3.2 | 11.200 | GST06-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 13       | 53       | - | 311     | 50       | 67    | 1.3 | 11.250 | GST07-1M□□□080C32 | E84AV□□□2224□□□ | 112 |
| 12       | 48       | - | 278     | 55       | 73    | 3.0 | 12.571 | GST06-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 11       | 46       | - | 269     | 57       | 76    | 1.4 | 13.016 | GST05-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 10       | 42       | - | 245     | 62       | 83    | 2.8 | 14.286 | GST06-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 10       | 42       | - | 244     | 63       | 84    | 1.3 | 14.356 | GST05-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 9.5      | 39       | - | 227     | 67       | 90    | 3.0 | 15.400 | GST06-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 9.0      | 37       | - | 216     | 71       | 94    | 1.3 | 16.190 | GST05-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 8.3      | 34       | - | 200     | 76       | 102   | 1.2 | 17.500 | GST05-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 8.3      | 34       | - | 200     | 76       | 102   | 2.6 | 17.500 | GST06-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 7.3      | 30       | - | 175     | 88       | 117   | 1.2 | 20.044 | GST05-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 7.3      | 30       | - | 175     | 88       | 117   | 2.6 | 20.044 | GST06-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 6.4      | 26       | - | 154     | 99       | 133   | 0.9 | 22.778 | GST05-2M□□□080C32 | E84AV□□□2224□□□ | 118 |



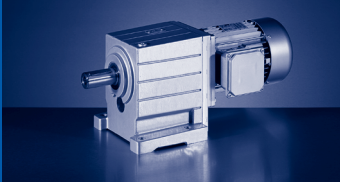


120 Hz:  $P_N = 2.20 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.8 \dots 3500 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i       |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|---------|-------------------|-----------------|-----|
| 6.4                 | 26                  | - | 154              | 99               | 133           | 2.0 | 22.778  | GST06-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 5.9                 | 24                  | - | 140              | 109              | 145           | 1.0 | 24.933  | GST05-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 5.9                 | 24                  | - | 140              | 109              | 145           | 2.1 | 24.933  | GST06-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 5.2                 | 21                  | - | 124              | 124              | 165           | 1.6 | 28.333  | GST06-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 4.5                 | 19                  | - | 109              | 141              | 188           | 1.7 | 32.267  | GST06-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 4.5                 | 19                  | - | 109              | 141              | 188           | 3.1 | 32.267  | GST07-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 4.0                 | 16                  | - | 96               | 160              | 214           | 1.3 | 36.667  | GST06-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 4.0                 | 16                  | - | 96               | 160              | 214           | 2.8 | 36.667  | GST07-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 3.7                 | 15                  | - | 89               | 169              | 225           | 1.2 | 39.200  | GST06-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 3.7                 | 15                  | - | 89               | 171              | 228           | 1.4 | 39.160  | GST06-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 3.7                 | 15                  | - | 89               | 171              | 228           | 2.4 | 39.160  | GST07-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 3.7                 | 15                  | - | 89               | 169              | 225           | 2.6 | 39.200  | GST07-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 3.3                 | 14                  | - | 80               | 189              | 252           | 1.3 | 44.000  | GST06-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 3.3                 | 14                  | - | 80               | 189              | 252           | 2.7 | 44.000  | GST07-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 3.3                 | 14                  | - | 79               | 194              | 259           | 1.2 | 44.500  | GST06-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 3.3                 | 14                  | - | 79               | 194              | 259           | 2.6 | 44.500  | GST07-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 3.0                 | 12                  | - | 71               | 216              | 288           | 1.6 | 49.500  | GST07-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 2.9                 | 12                  | - | 69               | 219              | 293           | 1.1 | 51.022  | GST06-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 2.9                 | 12                  | - | 69               | 219              | 293           | 2.3 | 51.022  | GST07-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 2.7                 | 11                  | - | 65               | 232              | 309           | 1.1 | 53.900  | GST06-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 2.7                 | 11                  | - | 65               | 232              | 309           | 2.2 | 53.900  | GST07-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 2.6                 | 11                  | - | 62               | 246              | 328           | 1.6 | 56.250  | GST07-2M□□□080C32 | E84AV□□□2224□□□ | 118 |
| 2.2                 | 9.2                 | - | 54               | 280              | 373           | 1.8 | 65.079  | GST07-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 2.1                 | 8.6                 | - | 50               | 302              | 403           | 1.7 | 70.156  | GST07-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 1.8                 | 7.5                 | - | 44               | 343              | 458           | 1.5 | 79.762  | GST07-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 1.8                 | 7.4                 | - | 43               | 351              | 469           | 3.2 | 81.667  | GST09-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 1.7                 | 7.0                 | - | 41               | 370              | 493           | 1.4 | 85.983  | GST07-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 1.6                 | 6.4                 | - | 37               | 402              | 537           | 2.9 | 93.541  | GST09-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 1.5                 | 6.1                 | - | 36               | 420              | 561           | 1.2 | 97.708  | GST07-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 1.5                 | 6.1                 | - | 35               | 427              | 569           | 2.7 | 99.167  | GST09-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 1.3                 | 5.4                 | - | 31               | 481              | 642           | 1.0 | 111.915 | GST07-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 1.3                 | 5.3                 | - | 31               | 489              | 652           | 2.4 | 113.585 | GST09-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 1.2                 | 4.7                 | - | 28               | 547              | 730           | 0.9 | 127.176 | GST07-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 1.1                 | 4.7                 | - | 27               | 555              | 741           | 2.1 | 129.074 | GST09-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 1.0                 | 4.3                 | - | 25               | 608              | 811           | 1.9 | 141.289 | GST09-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 1.0                 | 4.1                 | - | 24               | 632              | 843           | 3.0 | 146.993 | GST11-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 0.9                 | 3.7                 | - | 22               | 691              | 921           | 1.7 | 160.556 | GST09-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 0.9                 | 3.8                 | - | 22               | 680              | 908           | 2.9 | 158.194 | GST11-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 0.8                 | 3.3                 | - | 19               | 786              | 1049          | 1.5 | 182.844 | GST09-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 0.8                 | 3.3                 | - | 19               | 775              | 1034          | 2.5 | 180.156 | GST11-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 0.7                 | 2.9                 | - | 17               | 894              | 1192          | 1.3 | 207.778 | GST09-3M□□□080C32 | E84AV□□□2224□□□ | 124 |



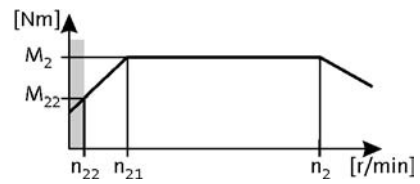
# GST

GST [Nm] - MF□MA

120 Hz:  $P_N = 2.20 \text{ kW}$

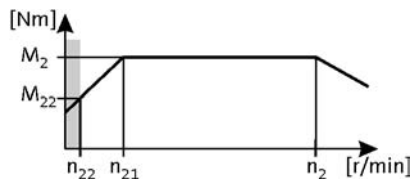
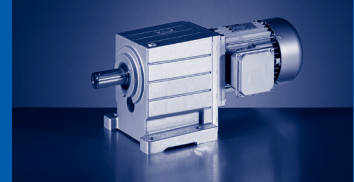
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.8 \dots 3500 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 0.7      | 2.9      | - | 17      | 894      | 1192  | 2.2 | 207.778 | GST11-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 0.6      | 2.5      | - | 15      | 1018     | 1357  | 1.1 | 236.622 | GST09-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 0.6      | 2.5      | - | 15      | 1018     | 1357  | 1.9 | 236.622 | GST11-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 0.6      | 2.4      | - | 14      | 1084     | 1447  | 1.1 | 252.167 | GST09-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 0.6      | 2.4      | - | 14      | 1084     | 1447  | 1.8 | 252.167 | GST11-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 0.5      | 2.2      | - | 13      | 1156     | 1543  | 1.0 | 268.889 | GST09-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 0.5      | 2.2      | - | 13      | 1156     | 1543  | 1.8 | 268.889 | GST11-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 0.5      | 1.8      | - | 11      | 1403     | 1872  | 1.4 | 326.333 | GST11-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 0.4      | 1.7      | - | 9.6     | 1561     | 2082  | 1.2 | 363.000 | GST11-3M□□□080C32 | E84AV□□□2224□□□ | 124 |
| 0.4      | 1.5      | - | 8.5     | 1774     | 2366  | 1.1 | 412.500 | GST11-3M□□□080C32 | E84AV□□□2224□□□ | 124 |

3

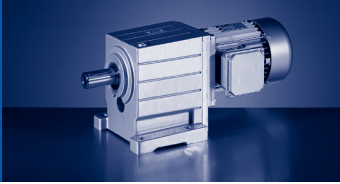


120 Hz:  $P_N = 3.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 71       | 440      | - | 1700    | 13       | 17    | 1.0 | 2.048  | GST04-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 71       | 440      | - | 1700    | 13       | 17    | 2.4 | 2.048  | GST05-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 71       | 440      | - | 1700    | 13       | 17    | 3.1 | 2.048  | GST06-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 65       | 402      | - | 1554    | 14       | 18    | 1.0 | 2.240  | GST04-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 65       | 402      | - | 1554    | 14       | 18    | 2.2 | 2.240  | GST05-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 65       | 402      | - | 1554    | 14       | 18    | 3.1 | 2.240  | GST06-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 51       | 315      | - | 1218    | 17       | 23    | 1.7 | 2.857  | GST05-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 51       | 315      | - | 1218    | 17       | 23    | 2.9 | 2.857  | GST06-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 51       | 315      | - | 1218    | 17       | 23    | 3.1 | 2.857  | GST07-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 41       | 257      | - | 994     | 21       | 28    | 1.4 | 3.500  | GST05-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 41       | 257      | - | 994     | 21       | 28    | 2.6 | 3.500  | GST06-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 32       | 198      | - | 764     | 28       | 37    | 1.1 | 4.556  | GST05-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 32       | 198      | - | 764     | 28       | 37    | 2.1 | 4.556  | GST06-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 32       | 198      | - | 764     | 28       | 37    | 2.6 | 4.556  | GST07-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 28       | 174      | - | 671     | 31       | 41    | 0.9 | 5.187  | GST04-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 28       | 174      | - | 671     | 31       | 41    | 1.6 | 5.187  | GST05-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 27       | 169      | - | 654     | 32       | 43    | 3.1 | 5.324  | GST06-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 26       | 161      | - | 623     | 34       | 45    | 2.1 | 5.583  | GST07-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 26       | 159      | - | 614     | 35       | 46    | 1.7 | 5.667  | GST06-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 25       | 154      | - | 595     | 35       | 47    | 1.6 | 5.850  | GST05-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 25       | 154      | - | 595     | 35       | 47    | 3.1 | 5.850  | GST06-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 23       | 141      | - | 544     | 38       | 51    | 1.5 | 6.400  | GST05-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 23       | 141      | - | 544     | 38       | 51    | 3.1 | 6.400  | GST06-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 20       | 124      | - | 481     | 43       | 58    | 1.4 | 7.238  | GST05-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 20       | 123      | - | 475     | 45       | 60    | 1.3 | 7.333  | GST06-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 20       | 123      | - | 475     | 45       | 60    | 2.0 | 7.333  | GST07-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 18       | 110      | - | 426     | 49       | 65    | 1.3 | 8.163  | GST05-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 18       | 110      | - | 426     | 49       | 65    | 2.9 | 8.163  | GST06-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 16       | 101      | - | 391     | 54       | 72    | 1.6 | 8.900  | GST07-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 16       | 100      | - | 386     | 54       | 72    | 1.2 | 9.010  | GST05-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 16       | 100      | - | 386     | 54       | 72    | 2.7 | 9.010  | GST06-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 15       | 90       | - | 348     | 60       | 80    | 1.2 | 10.000 | GST05-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 15       | 90       | - | 348     | 60       | 80    | 2.5 | 10.000 | GST06-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 13       | 80       | - | 311     | 67       | 90    | 1.1 | 11.200 | GST05-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 13       | 80       | - | 311     | 67       | 90    | 2.4 | 11.200 | GST06-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 13       | 80       | - | 309     | 68       | 91    | 0.9 | 11.250 | GST07-1M□□□080C42 | E84AV□□□3024□□S | 112 |
| 12       | 72       | - | 277     | 75       | 100   | 2.2 | 12.571 | GST06-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 12       | 72       | - | 277     | 75       | 100   | 3.1 | 12.571 | GST07-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 11       | 69       | - | 267     | 78       | 104   | 1.0 | 13.016 | GST05-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 10       | 63       | - | 244     | 86       | 114   | 2.0 | 14.286 | GST06-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 10       | 63       | - | 244     | 86       | 114   | 3.1 | 14.286 | GST07-2M□□□080C42 | E84AV□□□3024□□S | 118 |



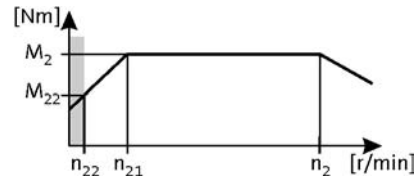
# GST

GST [Nm] - MF□MA

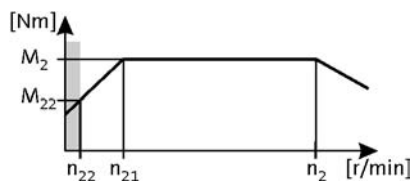
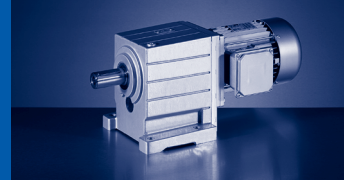
120 Hz:  $P_N = 3.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | c   | i       |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 10       | 63       | - | 242     | 86       | 115   | 0.9 | 14.356  | GST05-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 9.4      | 58       | - | 226     | 92       | 123   | 2.2 | 15.400  | GST06-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 9.0      | 56       | - | 215     | 97       | 129   | 1.0 | 16.190  | GST05-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 8.3      | 51       | - | 199     | 105      | 140   | 1.9 | 17.500  | GST06-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 7.2      | 45       | - | 174     | 120      | 160   | 1.9 | 20.044  | GST06-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 7.2      | 45       | - | 174     | 120      | 160   | 2.9 | 20.044  | GST07-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 6.4      | 40       | - | 153     | 137      | 182   | 1.5 | 22.778  | GST06-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 6.4      | 40       | - | 153     | 137      | 182   | 2.9 | 22.778  | GST07-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 5.9      | 37       | - | 142     | 147      | 196   | 2.4 | 24.567  | GST07-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 5.8      | 36       | - | 140     | 149      | 199   | 1.6 | 24.933  | GST06-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 5.2      | 32       | - | 125     | 167      | 223   | 2.4 | 27.917  | GST07-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 5.1      | 32       | - | 123     | 170      | 226   | 1.2 | 28.333  | GST06-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 4.5      | 28       | - | 108     | 193      | 258   | 1.2 | 32.267  | GST06-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 4.5      | 28       | - | 108     | 193      | 258   | 2.3 | 32.267  | GST07-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 4.0      | 25       | - | 95      | 220      | 293   | 0.9 | 36.667  | GST06-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 4.0      | 25       | - | 95      | 220      | 293   | 2.1 | 36.667  | GST07-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 3.7      | 23       | - | 89      | 235      | 313   | 1.0 | 39.160  | GST06-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 3.7      | 23       | - | 89      | 235      | 313   | 1.8 | 39.160  | GST07-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 3.7      | 23       | - | 89      | 231      | 308   | 1.9 | 39.200  | GST07-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 3.3      | 21       | - | 79      | 260      | 346   | 0.9 | 44.000  | GST06-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 3.3      | 21       | - | 79      | 260      | 346   | 1.9 | 44.000  | GST07-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 3.3      | 20       | - | 78      | 267      | 355   | 1.9 | 44.500  | GST07-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 2.9      | 18       | - | 70      | 297      | 395   | 1.2 | 49.500  | GST07-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 2.8      | 18       | - | 68      | 301      | 401   | 1.7 | 51.022  | GST07-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 2.7      | 17       | - | 66      | 313      | 417   | 3.1 | 53.044  | GST09-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 2.7      | 17       | - | 65      | 318      | 424   | 1.6 | 53.900  | GST07-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 2.6      | 16       | - | 62      | 337      | 449   | 1.2 | 56.250  | GST07-2M□□□080C42 | E84AV□□□3024□□S | 118 |
| 2.4      | 15       | - | 58      | 356      | 474   | 3.1 | 60.278  | GST09-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 2.2      | 14       | - | 54      | 384      | 512   | 1.3 | 65.079  | GST07-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 2.1      | 13       | - | 50      | 414      | 552   | 1.2 | 70.156  | GST07-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 2.0      | 13       | - | 48      | 424      | 565   | 2.5 | 71.867  | GST09-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 1.8      | 11       | - | 44      | 471      | 628   | 1.1 | 79.762  | GST07-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 1.8      | 11       | - | 43      | 482      | 643   | 2.3 | 81.667  | GST09-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 1.7      | 11       | - | 41      | 507      | 677   | 1.0 | 85.983  | GST07-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 1.6      | 9.6      | - | 37      | 552      | 736   | 2.1 | 93.541  | GST09-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 1.5      | 9.1      | - | 35      | 585      | 780   | 1.9 | 99.167  | GST09-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 1.3      | 7.9      | - | 31      | 670      | 894   | 1.7 | 113.585 | GST09-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 1.1      | 7.0      | - | 27      | 762      | 1016  | 1.5 | 129.074 | GST09-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 1.1      | 7.0      | - | 27      | 762      | 1016  | 2.6 | 129.074 | GST11-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 1.0      | 6.4      | - | 25      | 834      | 1112  | 1.4 | 141.289 | GST09-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 1.0      | 6.1      | - | 24      | 867      | 1157  | 2.2 | 146.993 | GST11-3M□□□080C42 | E84AV□□□3024□□S | 124 |



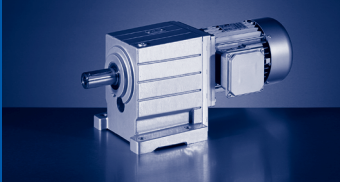
120 Hz:  $P_N = 3.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 0.9      | 5.6      | - | 22      | 947      | 1263  | 1.2 | 160.556 | GST09-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 0.9      | 5.7      | - | 22      | 934      | 1245  | 2.1 | 158.194 | GST11-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 0.8      | 4.9      | - | 19      | 1079     | 1439  | 1.1 | 182.844 | GST09-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 0.8      | 5.0      | - | 19      | 1063     | 1417  | 1.8 | 180.156 | GST11-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 0.7      | 4.3      | - | 17      | 1226     | 1635  | 0.9 | 207.778 | GST09-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 0.7      | 4.3      | - | 17      | 1226     | 1635  | 1.6 | 207.778 | GST11-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 0.6      | 3.8      | - | 15      | 1396     | 1862  | 1.4 | 236.622 | GST11-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 0.6      | 3.6      | - | 14      | 1488     | 1984  | 1.3 | 252.167 | GST11-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 0.5      | 3.4      | - | 13      | 1587     | 2116  | 1.3 | 268.889 | GST11-3M□□□080C42 | E84AV□□□3024□□S | 124 |
| 0.4      | 2.8      | - | 11      | 1926     | 2568  | 1.1 | 326.333 | GST11-3M□□□080C42 | E84AV□□□3024□□S | 124 |

3



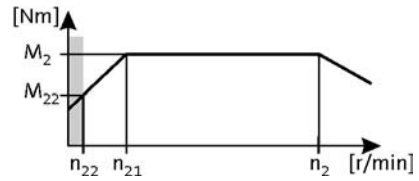
# GST

GST [Nm] - MF□MA

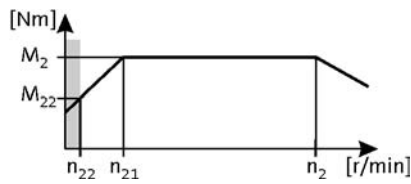
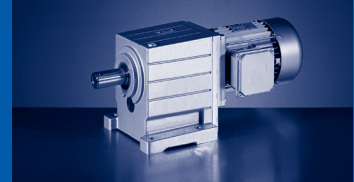
120 Hz:  $P_N = 4.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 71       | 293      | - | 1700    | 16       | 22    | 1.8 | 2.048  | GST05-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 71       | 293      | - | 1700    | 16       | 22    | 2.5 | 2.048  | GST06-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 65       | 268      | - | 1554    | 17       | 24    | 1.7 | 2.240  | GST05-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 65       | 268      | - | 1554    | 17       | 24    | 2.4 | 2.240  | GST06-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 51       | 210      | - | 1218    | 22       | 31    | 1.3 | 2.857  | GST05-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 51       | 210      | - | 1218    | 22       | 31    | 2.3 | 2.857  | GST06-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 51       | 210      | - | 1218    | 22       | 31    | 2.9 | 2.857  | GST07-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 41       | 171      | - | 994     | 27       | 38    | 1.1 | 3.500  | GST05-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 41       | 171      | - | 994     | 27       | 38    | 2.1 | 3.500  | GST06-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 32       | 132      | - | 764     | 35       | 49    | 1.6 | 4.556  | GST06-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 32       | 132      | - | 764     | 35       | 49    | 2.4 | 4.556  | GST07-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 28       | 116      | - | 671     | 39       | 55    | 1.2 | 5.187  | GST05-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 27       | 113      | - | 654     | 40       | 57    | 2.8 | 5.324  | GST06-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 26       | 108      | - | 623     | 42       | 60    | 2.0 | 5.583  | GST07-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 26       | 106      | - | 614     | 43       | 61    | 1.3 | 5.667  | GST06-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 25       | 103      | - | 595     | 44       | 62    | 1.2 | 5.850  | GST05-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 25       | 103      | - | 595     | 44       | 62    | 2.7 | 5.850  | GST06-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 23       | 94       | - | 544     | 48       | 68    | 1.2 | 6.400  | GST05-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 23       | 94       | - | 544     | 48       | 68    | 2.5 | 6.400  | GST06-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 20       | 83       | - | 481     | 54       | 77    | 1.1 | 7.238  | GST05-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 20       | 82       | - | 475     | 56       | 79    | 1.0 | 7.333  | GST06-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 20       | 82       | - | 475     | 56       | 79    | 1.7 | 7.333  | GST07-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 20       | 82       | - | 475     | 56       | 79    | 2.0 | 7.333  | GST09-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 18       | 74       | - | 426     | 61       | 87    | 1.0 | 8.163  | GST05-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 18       | 74       | - | 426     | 61       | 87    | 2.2 | 8.163  | GST06-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 16       | 67       | - | 391     | 67       | 96    | 1.4 | 8.900  | GST07-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 16       | 67       | - | 391     | 67       | 96    | 1.8 | 8.900  | GST09-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 16       | 67       | - | 386     | 67       | 96    | 0.9 | 9.010  | GST05-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 16       | 67       | - | 386     | 67       | 96    | 2.1 | 9.010  | GST06-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 15       | 60       | - | 348     | 75       | 107   | 1.9 | 10.000 | GST06-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 13       | 54       | - | 311     | 84       | 119   | 1.8 | 11.200 | GST06-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 13       | 53       | - | 309     | 85       | 122   | 1.4 | 11.250 | GST09-1M□□□090C32 | E84AV□□□4024□□□ | 112 |
| 12       | 48       | - | 277     | 94       | 134   | 1.7 | 12.571 | GST06-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 12       | 48       | - | 277     | 94       | 134   | 2.9 | 12.571 | GST07-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 10       | 42       | - | 244     | 107      | 152   | 1.5 | 14.286 | GST06-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 10       | 42       | - | 244     | 107      | 152   | 2.9 | 14.286 | GST07-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 9.4      | 39       | - | 226     | 115      | 164   | 1.7 | 15.400 | GST06-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 8.3      | 34       | - | 199     | 131      | 186   | 1.4 | 17.500 | GST06-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 7.2      | 30       | - | 174     | 149      | 214   | 1.4 | 20.044 | GST06-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 7.2      | 30       | - | 174     | 149      | 214   | 2.8 | 20.044 | GST07-2M□□□090C32 | E84AV□□□4024□□□ | 118 |
| 6.4      | 26       | - | 153     | 170      | 243   | 1.1 | 22.778 | GST06-2M□□□090C32 | E84AV□□□4024□□□ | 118 |

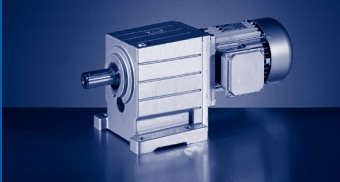


120 Hz:  $P_N = 4.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i       |                   |                 |     |  |
|---------------------|---------------------|------------------|------------------|---------------|-----|---------|-------------------|-----------------|-----|--|
| 6.4                 | 26                  | -                | 153              | 170           | 2.4 | 22.778  | GST07-2M□□□090C32 | E84AV□□□4024□□□ | 118 |  |
| 5.9                 | 24                  | -                | 142              | 183           | 2.3 | 24.567  | GST07-2M□□□090C32 | E84AV□□□4024□□□ | 118 |  |
| 5.8                 | 24                  | -                | 140              | 186           | 1.2 | 24.933  | GST06-2M□□□090C32 | E84AV□□□4024□□□ | 118 |  |
| 5.2                 | 22                  | -                | 125              | 208           | 2.0 | 27.917  | GST07-2M□□□090C32 | E84AV□□□4024□□□ | 118 |  |
| 5.1                 | 21                  | -                | 123              | 211           | 0.9 | 28.333  | GST06-2M□□□090C32 | E84AV□□□4024□□□ | 118 |  |
| 4.5                 | 19                  | -                | 108              | 241           | 0.9 | 32.267  | GST06-2M□□□090C32 | E84AV□□□4024□□□ | 118 |  |
| 4.5                 | 19                  | -                | 108              | 241           | 1.8 | 32.267  | GST07-2M□□□090C32 | E84AV□□□4024□□□ | 118 |  |
| 4.5                 | 19                  | -                | 108              | 241           | 2.3 | 32.267  | GST09-2M□□□090C32 | E84AV□□□4024□□□ | 118 |  |
| 4.0                 | 16                  | -                | 95               | 273           | 1.5 | 36.667  | GST07-2M□□□090C32 | E84AV□□□4024□□□ | 118 |  |
| 4.0                 | 16                  | -                | 95               | 273           | 2.3 | 36.667  | GST09-2M□□□090C32 | E84AV□□□4024□□□ | 118 |  |
| 3.7                 | 15                  | -                | 89               | 288           | 1.4 | 39.200  | GST07-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 3.7                 | 15                  | -                | 89               | 292           | 1.5 | 39.160  | GST07-2M□□□090C32 | E84AV□□□4024□□□ | 118 |  |
| 3.7                 | 15                  | -                | 89               | 292           | 2.0 | 39.160  | GST09-2M□□□090C32 | E84AV□□□4024□□□ | 118 |  |
| 3.6                 | 15                  | -                | 87               | 295           | 2.7 | 40.136  | GST09-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 3.4                 | 14                  | -                | 80               | 318           | 2.7 | 43.267  | GST09-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 3.3                 | 14                  | -                | 79               | 323           | 1.5 | 44.000  | GST07-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 3.3                 | 14                  | -                | 78               | 332           | 1.4 | 44.500  | GST07-2M□□□090C32 | E84AV□□□4024□□□ | 118 |  |
| 3.3                 | 14                  | -                | 78               | 332           | 2.2 | 44.500  | GST09-2M□□□090C32 | E84AV□□□4024□□□ | 118 |  |
| 3.0                 | 12                  | -                | 71               | 361           | 2.7 | 49.167  | GST09-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 2.9                 | 12                  | -                | 70               | 369           | 1.1 | 49.500  | GST07-2M□□□090C32 | E84AV□□□4024□□□ | 118 |  |
| 2.9                 | 12                  | -                | 70               | 369           | 1.7 | 49.500  | GST09-2M□□□090C32 | E84AV□□□4024□□□ | 118 |  |
| 2.8                 | 12                  | -                | 68               | 375           | 1.2 | 51.022  | GST07-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 2.7                 | 11                  | -                | 66               | 390           | 2.4 | 53.044  | GST09-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 2.7                 | 11                  | -                | 65               | 396           | 1.2 | 53.900  | GST07-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 2.6                 | 11                  | -                | 62               | 419           | 1.1 | 56.250  | GST07-2M□□□090C32 | E84AV□□□4024□□□ | 118 |  |
| 2.6                 | 11                  | -                | 62               | 419           | 1.7 | 56.250  | GST09-2M□□□090C32 | E84AV□□□4024□□□ | 118 |  |
| 2.4                 | 10                  | -                | 58               | 443           | 2.4 | 60.278  | GST09-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 2.2                 | 9.2                 | -                | 54               | 478           | 1.0 | 65.079  | GST07-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 2.1                 | 8.6                 | -                | 50               | 515           | 0.9 | 70.156  | GST07-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 2.0                 | 8.4                 | -                | 48               | 528           | 1.9 | 71.867  | GST09-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 1.8                 | 7.4                 | -                | 43               | 600           | 1.8 | 81.667  | GST09-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 1.6                 | 6.4                 | -                | 37               | 687           | 1.6 | 93.541  | GST09-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 1.5                 | 6.1                 | -                | 35               | 728           | 1.5 | 99.167  | GST09-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 1.3                 | 5.3                 | -                | 31               | 834           | 1.3 | 113.585 | GST09-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 1.1                 | 4.7                 | -                | 27               | 948           | 1.1 | 129.074 | GST09-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 1.1                 | 4.7                 | -                | 27               | 948           | 2.0 | 129.074 | GST11-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 1.0                 | 4.3                 | -                | 25               | 1038          | 1.0 | 141.289 | GST09-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 1.0                 | 4.1                 | -                | 24               | 1079          | 1.7 | 146.993 | GST11-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 0.9                 | 3.7                 | -                | 22               | 1179          | 0.9 | 160.556 | GST09-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 0.9                 | 3.8                 | -                | 22               | 1162          | 1.6 | 158.194 | GST11-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |
| 0.8                 | 3.3                 | -                | 19               | 1323          | 1.4 | 180.156 | GST11-3M□□□090C32 | E84AV□□□4024□□□ | 124 |  |



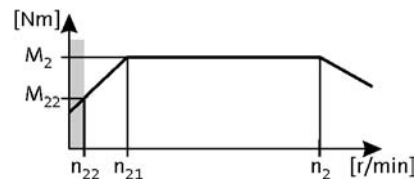
# GST

GST [Nm] - MF□MA

120 Hz:  $P_N = 4.00$  kW

$n_{22} / n_2 = 1 \dots 24.0$

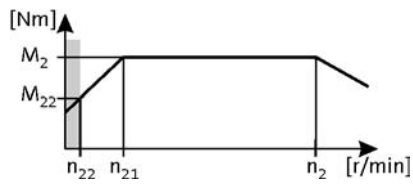
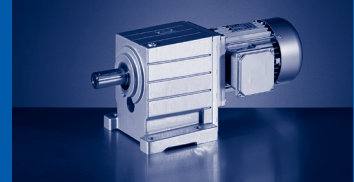
$n_1 = 145.0 \dots 3480$  r/min



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 0.7      | 2.9      | - | 17      | 1526     | 2180  | 1.2 | 207.778 | GST11-3M□□□090C32 | E84AV□□□4024□□□ | 124 |
| 0.7      | 2.9      | - | 17      | 1503     | 2148  | 2.5 | 204.722 | GST14-3M□□□090C32 | E84AV□□□4024□□□ | 124 |
| 0.6      | 2.5      | - | 15      | 1738     | 2482  | 1.0 | 236.622 | GST11-3M□□□090C32 | E84AV□□□4024□□□ | 124 |
| 0.6      | 2.5      | - | 15      | 1738     | 2482  | 2.2 | 236.622 | GST14-3M□□□090C32 | E84AV□□□4024□□□ | 124 |
| 0.6      | 2.4      | - | 14      | 1852     | 2645  | 1.0 | 252.167 | GST11-3M□□□090C32 | E84AV□□□4024□□□ | 124 |
| 0.6      | 2.4      | - | 14      | 1825     | 2606  | 2.2 | 248.458 | GST14-3M□□□090C32 | E84AV□□□4024□□□ | 124 |
| 0.5      | 2.2      | - | 13      | 1975     | 2821  | 1.0 | 268.889 | GST11-3M□□□090C32 | E84AV□□□4024□□□ | 124 |
| 0.5      | 2.2      | - | 13      | 1975     | 2821  | 2.0 | 268.889 | GST14-3M□□□090C32 | E84AV□□□4024□□□ | 124 |
| 0.4      | 1.8      | - | 11      | 2396     | 3423  | 1.6 | 326.333 | GST14-3M□□□090C32 | E84AV□□□4024□□□ | 124 |
| 0.4      | 1.7      | - | 9.6     | 2666     | 3808  | 1.4 | 363.000 | GST14-3M□□□090C32 | E84AV□□□4024□□□ | 124 |
| 0.4      | 1.5      | - | 8.4     | 3029     | 4327  | 1.3 | 412.500 | GST14-3M□□□090C32 | E84AV□□□4024□□□ | 124 |

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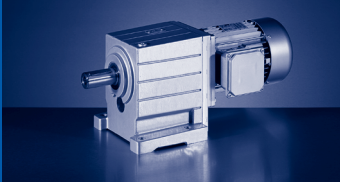
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$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 146.9 \dots 3525 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i      |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|--------|-------------------|-----------------|-----|
| 73                  | 300                 | - | 1763             | 21               | 29            | 3.2 | 2.000  | GST07-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 72                  | 293                 | - | 1722             | 21               | 30            | 1.3 | 2.048  | GST05-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 72                  | 293                 | - | 1722             | 21               | 30            | 1.8 | 2.048  | GST06-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 66                  | 268                 | - | 1574             | 23               | 33            | 1.2 | 2.240  | GST05-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 66                  | 268                 | - | 1574             | 23               | 33            | 1.8 | 2.240  | GST06-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 66                  | 268                 | - | 1574             | 23               | 33            | 3.1 | 2.240  | GST07-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 51                  | 210                 | - | 1234             | 29               | 42            | 1.0 | 2.857  | GST05-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 51                  | 210                 | - | 1234             | 29               | 42            | 1.7 | 2.857  | GST06-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 51                  | 210                 | - | 1234             | 29               | 42            | 2.8 | 2.857  | GST07-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 42                  | 171                 | - | 1007             | 36               | 51            | 1.5 | 3.500  | GST06-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 42                  | 171                 | - | 1007             | 36               | 51            | 2.5 | 3.500  | GST07-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 32                  | 132                 | - | 774              | 47               | 67            | 1.2 | 4.556  | GST06-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 32                  | 132                 | - | 774              | 47               | 67            | 2.1 | 4.556  | GST07-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 32                  | 129                 | - | 755              | 48               | 69            | 3.0 | 4.667  | GST09-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 28                  | 116                 | - | 680              | 53               | 75            | 0.9 | 5.187  | GST05-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 28                  | 113                 | - | 662              | 54               | 77            | 2.0 | 5.324  | GST06-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 26                  | 108                 | - | 631              | 57               | 82            | 1.8 | 5.583  | GST07-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 26                  | 106                 | - | 622              | 58               | 83            | 1.0 | 5.667  | GST06-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 26                  | 106                 | - | 622              | 58               | 83            | 2.5 | 5.667  | GST09-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 25                  | 103                 | - | 603              | 59               | 85            | 0.9 | 5.850  | GST05-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 25                  | 103                 | - | 603              | 59               | 85            | 2.0 | 5.850  | GST06-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 23                  | 94                  | - | 551              | 65               | 93            | 1.9 | 6.400  | GST06-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 20                  | 82                  | - | 481              | 75               | 108           | 1.4 | 7.333  | GST07-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 20                  | 82                  | - | 481              | 75               | 108           | 2.0 | 7.333  | GST09-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 18                  | 74                  | - | 432              | 83               | 118           | 1.6 | 8.163  | GST06-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 17                  | 68                  | - | 401              | 89               | 127           | 3.1 | 8.800  | GST07-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 17                  | 67                  | - | 396              | 91               | 131           | 1.1 | 8.900  | GST07-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 17                  | 67                  | - | 396              | 91               | 131           | 1.7 | 8.900  | GST09-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 16                  | 67                  | - | 391              | 91               | 130           | 1.5 | 9.010  | GST06-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 15                  | 61                  | - | 358              | 100              | 143           | 2.9 | 9.856  | GST07-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 15                  | 60                  | - | 353              | 101              | 145           | 1.4 | 10.000 | GST06-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 13                  | 54                  | - | 315              | 113              | 162           | 1.3 | 11.200 | GST06-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 13                  | 54                  | - | 315              | 113              | 162           | 2.8 | 11.200 | GST07-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 13                  | 53                  | - | 313              | 116              | 165           | 1.3 | 11.250 | GST09-1M□□□100C12 | E84AV□□□5524□□□ | 112 |
| 12                  | 48                  | - | 280              | 127              | 182           | 1.2 | 12.571 | GST06-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 12                  | 48                  | - | 280              | 127              | 182           | 2.5 | 12.571 | GST07-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 10                  | 42                  | - | 247              | 145              | 207           | 1.1 | 14.286 | GST06-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 10                  | 42                  | - | 247              | 145              | 207           | 2.3 | 14.286 | GST07-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 9.5                 | 39                  | - | 229              | 156              | 223           | 1.2 | 15.400 | GST06-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 9.5                 | 39                  | - | 229              | 156              | 223           | 2.5 | 15.400 | GST07-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 8.4                 | 34                  | - | 201              | 177              | 253           | 1.1 | 17.500 | GST06-2M□□□100C12 | E84AV□□□5524□□□ | 118 |

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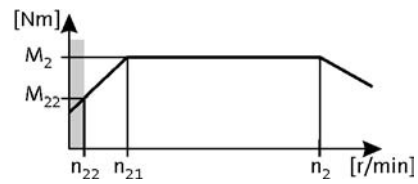
# GST

GST [Nm] - MF□MA

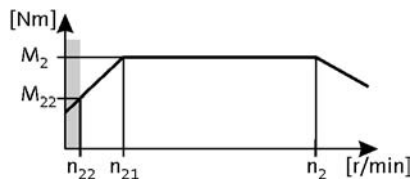
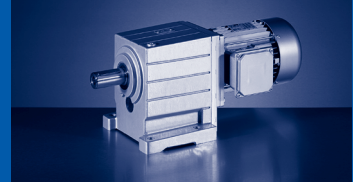
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$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 146.9 \dots 3525 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | c   | i      |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 8.4      | 34       | - | 201     | 177      | 253   | 2.3 | 17.500 | GST07-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 7.3      | 30       | - | 176     | 203      | 290   | 1.0 | 20.044 | GST06-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 7.3      | 30       | - | 176     | 203      | 290   | 2.0 | 20.044 | GST07-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 6.5      | 26       | - | 155     | 231      | 329   | 1.8 | 22.778 | GST07-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 6.0      | 24       | - | 144     | 249      | 355   | 1.7 | 24.567 | GST07-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 5.9      | 24       | - | 141     | 252      | 361   | 2.9 | 24.933 | GST09-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 5.3      | 22       | - | 126     | 283      | 404   | 1.5 | 27.917 | GST07-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 5.2      | 21       | - | 124     | 287      | 410   | 2.9 | 28.333 | GST09-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 4.6      | 19       | - | 109     | 327      | 467   | 1.3 | 32.267 | GST07-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 4.6      | 19       | - | 109     | 327      | 467   | 2.3 | 32.267 | GST09-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 4.6      | 19       | - | 109     | 327      | 467   | 2.9 | 32.267 | GST11-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 4.0      | 16       | - | 96      | 371      | 530   | 1.1 | 36.667 | GST07-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 4.0      | 16       | - | 96      | 371      | 530   | 2.3 | 36.667 | GST09-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 4.0      | 16       | - | 96      | 371      | 530   | 2.9 | 36.667 | GST11-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 3.8      | 15       | - | 90      | 391      | 558   | 1.1 | 39.200 | GST07-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 3.8      | 15       | - | 90      | 396      | 566   | 1.1 | 39.160 | GST07-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 3.8      | 15       | - | 90      | 396      | 566   | 1.9 | 39.160 | GST09-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 3.8      | 15       | - | 90      | 396      | 566   | 2.4 | 39.160 | GST11-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 3.7      | 15       | - | 88      | 400      | 572   | 2.0 | 40.136 | GST09-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 3.4      | 14       | - | 82      | 431      | 616   | 2.0 | 43.267 | GST09-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 3.3      | 14       | - | 80      | 439      | 627   | 1.1 | 44.000 | GST07-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 3.3      | 14       | - | 79      | 450      | 643   | 1.0 | 44.500 | GST07-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 3.3      | 14       | - | 79      | 450      | 643   | 2.1 | 44.500 | GST09-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 3.3      | 14       | - | 79      | 450      | 643   | 2.7 | 44.500 | GST11-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 3.0      | 12       | - | 72      | 490      | 700   | 2.0 | 49.167 | GST09-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 3.0      | 12       | - | 71      | 501      | 716   | 1.7 | 49.500 | GST09-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 3.0      | 12       | - | 71      | 501      | 716   | 2.2 | 49.500 | GST11-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 2.9      | 12       | - | 69      | 509      | 727   | 0.9 | 51.022 | GST07-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 2.8      | 11       | - | 67      | 529      | 755   | 1.7 | 53.044 | GST09-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 2.6      | 11       | - | 63      | 569      | 813   | 1.7 | 56.250 | GST09-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 2.6      | 11       | - | 63      | 569      | 813   | 2.2 | 56.250 | GST11-2M□□□100C12 | E84AV□□□5524□□□ | 118 |
| 2.5      | 10       | - | 61      | 578      | 826   | 3.0 | 57.968 | GST11-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 2.4      | 10       | - | 59      | 601      | 858   | 1.7 | 60.278 | GST09-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 2.4      | 9.8      | - | 58      | 611      | 872   | 3.0 | 61.250 | GST11-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 2.1      | 8.5      | - | 50      | 708      | 1011  | 2.5 | 71.011 | GST11-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 2.0      | 8.4      | - | 49      | 716      | 1023  | 1.4 | 71.867 | GST09-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 1.8      | 7.4      | - | 44      | 804      | 1149  | 2.3 | 80.694 | GST11-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 1.8      | 7.4      | - | 43      | 814      | 1163  | 1.3 | 81.667 | GST09-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 1.7      | 6.9      | - | 40      | 870      | 1243  | 2.0 | 87.267 | GST11-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 1.6      | 6.4      | - | 38      | 932      | 1332  | 1.1 | 93.541 | GST09-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 1.5      | 6.1      | - | 36      | 989      | 1412  | 1.1 | 99.167 | GST09-3M□□□100C12 | E84AV□□□5524□□□ | 124 |



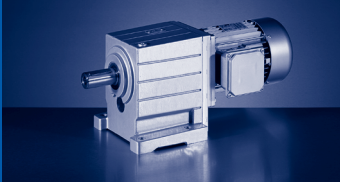
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$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 146.9 \dots 3525 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 1.5      | 6.1      | - | 36      | 989      | 1412  | 1.9 | 99.167  | GST11-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 1.3      | 5.3      | - | 31      | 1132     | 1618  | 0.9 | 113.585 | GST09-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 1.3      | 5.3      | - | 31      | 1126     | 1608  | 1.6 | 112.933 | GST11-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 1.1      | 4.7      | - | 27      | 1287     | 1838  | 1.4 | 129.074 | GST11-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 1.1      | 4.6      | - | 27      | 1299     | 1855  | 3.0 | 130.278 | GST14-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 1.1      | 4.3      | - | 25      | 1388     | 1982  | 2.7 | 139.211 | GST14-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 1.0      | 4.1      | - | 24      | 1465     | 2093  | 1.2 | 146.993 | GST11-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 0.9      | 3.8      | - | 22      | 1577     | 2253  | 1.2 | 158.194 | GST11-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 0.9      | 3.8      | - | 22      | 1577     | 2253  | 2.5 | 158.194 | GST14-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 0.9      | 3.5      | - | 21      | 1706     | 2437  | 2.3 | 171.111 | GST14-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 0.8      | 3.3      | - | 20      | 1796     | 2565  | 1.0 | 180.156 | GST11-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 0.7      | 2.9      | - | 17      | 2071     | 2959  | 0.9 | 207.778 | GST11-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 0.7      | 2.9      | - | 17      | 2041     | 2915  | 1.9 | 204.722 | GST14-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 0.6      | 2.5      | - | 15      | 2359     | 3370  | 1.6 | 236.622 | GST14-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 0.6      | 2.4      | - | 14      | 2477     | 3538  | 1.6 | 248.458 | GST14-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 0.6      | 2.2      | - | 13      | 2680     | 3829  | 1.5 | 268.889 | GST14-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 0.5      | 1.8      | - | 11      | 3253     | 4647  | 1.2 | 326.333 | GST14-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 0.4      | 1.7      | - | 9.7     | 3618     | 5169  | 1.1 | 363.000 | GST14-3M□□□100C12 | E84AV□□□5524□□□ | 124 |
| 0.4      | 1.5      | - | 8.6     | 4112     | 5874  | 1.0 | 412.500 | GST14-3M□□□100C12 | E84AV□□□5524□□□ | 124 |

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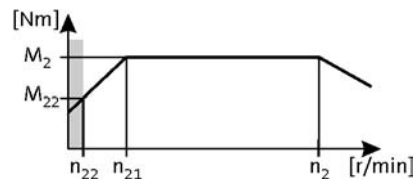
# GST

## GST [Nm] - MF□MA

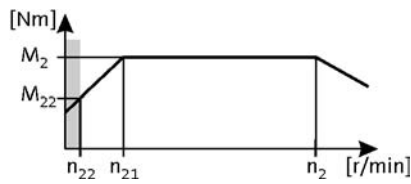
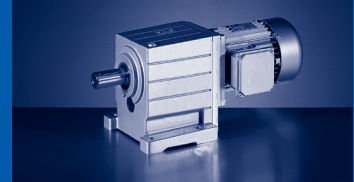
120 Hz:  $P_N = 7.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 146.5 \dots 3515 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 73       | 300      | - | 1758    | 28       | 40    | 2.3 | 2.000  | GST07-1M□□□100C32 | E84AV□□□7524□□□ | 112 |
| 72       | 293      | - | 1717    | 29       | 41    | 1.0 | 2.048  | GST05-1M□□□100C32 | E84AV□□□7524□□□ | 112 |
| 72       | 293      | - | 1717    | 29       | 41    | 1.3 | 2.048  | GST06-1M□□□100C32 | E84AV□□□7524□□□ | 112 |
| 65       | 268      | - | 1569    | 32       | 45    | 1.3 | 2.240  | GST06-1M□□□100C32 | E84AV□□□7524□□□ | 112 |
| 65       | 268      | - | 1569    | 32       | 45    | 2.3 | 2.240  | GST07-1M□□□100C32 | E84AV□□□7524□□□ | 112 |
| 52       | 214      | - | 1251    | 40       | 56    | 3.1 | 2.810  | GST09-1M□□□100C32 | E84AV□□□7524□□□ | 112 |
| 51       | 210      | - | 1230    | 40       | 57    | 1.2 | 2.857  | GST06-1M□□□100C32 | E84AV□□□7524□□□ | 112 |
| 51       | 210      | - | 1230    | 40       | 57    | 2.1 | 2.857  | GST07-1M□□□100C32 | E84AV□□□7524□□□ | 112 |
| 42       | 171      | - | 1004    | 49       | 70    | 1.1 | 3.500  | GST06-1M□□□100C32 | E84AV□□□7524□□□ | 112 |
| 42       | 171      | - | 1004    | 49       | 70    | 1.8 | 3.500  | GST07-1M□□□100C32 | E84AV□□□7524□□□ | 112 |
| 32       | 132      | - | 772     | 64       | 91    | 1.5 | 4.556  | GST07-1M□□□100C32 | E84AV□□□7524□□□ | 112 |
| 31       | 129      | - | 753     | 66       | 94    | 2.2 | 4.667  | GST09-1M□□□100C32 | E84AV□□□7524□□□ | 112 |
| 28       | 115      | - | 676     | 72       | 103   | 3.1 | 5.200  | GST07-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 28       | 113      | - | 660     | 74       | 105   | 1.5 | 5.324  | GST06-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 26       | 108      | - | 630     | 78       | 112   | 1.3 | 5.583  | GST07-1M□□□100C32 | E84AV□□□7524□□□ | 112 |
| 26       | 106      | - | 620     | 80       | 114   | 1.9 | 5.667  | GST09-1M□□□100C32 | E84AV□□□7524□□□ | 112 |
| 26       | 105      | - | 615     | 79       | 113   | 3.0 | 5.714  | GST07-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 25       | 103      | - | 601     | 81       | 116   | 1.4 | 5.850  | GST06-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 23       | 94       | - | 549     | 89       | 127   | 1.4 | 6.400  | GST06-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 23       | 94       | - | 549     | 89       | 127   | 2.8 | 6.400  | GST07-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 20       | 82       | - | 481     | 101      | 144   | 3.1 | 7.305  | GST09-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 20       | 82       | - | 479     | 103      | 147   | 1.0 | 7.333  | GST07-1M□□□100C32 | E84AV□□□7524□□□ | 112 |
| 20       | 82       | - | 479     | 103      | 147   | 1.5 | 7.333  | GST09-1M□□□100C32 | E84AV□□□7524□□□ | 112 |
| 18       | 75       | - | 438     | 111      | 159   | 3.1 | 8.027  | GST09-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 18       | 74       | - | 431     | 113      | 161   | 1.2 | 8.163  | GST06-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 17       | 68       | - | 399     | 122      | 174   | 2.3 | 8.800  | GST07-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 17       | 67       | - | 395     | 125      | 179   | 1.2 | 8.900  | GST09-1M□□□100C32 | E84AV□□□7524□□□ | 112 |
| 16       | 67       | - | 390     | 125      | 178   | 1.1 | 9.010  | GST06-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 15       | 61       | - | 357     | 136      | 195   | 2.1 | 9.856  | GST07-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 15       | 60       | - | 352     | 138      | 198   | 1.0 | 10.000 | GST06-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 13       | 54       | - | 314     | 155      | 221   | 1.0 | 11.200 | GST06-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 13       | 54       | - | 314     | 155      | 221   | 2.0 | 11.200 | GST07-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 13       | 53       | - | 312     | 158      | 226   | 1.0 | 11.250 | GST09-1M□□□100C32 | E84AV□□□7524□□□ | 112 |
| 12       | 49       | - | 284     | 171      | 244   | 3.1 | 12.362 | GST09-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 12       | 48       | - | 280     | 174      | 249   | 1.8 | 12.571 | GST07-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 10       | 43       | - | 250     | 194      | 278   | 3.1 | 14.048 | GST09-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 10       | 42       | - | 246     | 198      | 282   | 1.7 | 14.286 | GST07-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 9.5      | 39       | - | 228     | 213      | 305   | 1.8 | 15.400 | GST07-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 8.4      | 34       | - | 201     | 242      | 346   | 1.7 | 17.500 | GST07-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 7.3      | 30       | - | 175     | 277      | 396   | 1.5 | 20.044 | GST07-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 7.1      | 29       | - | 171     | 284      | 406   | 2.5 | 20.533 | GST09-2M□□□100C32 | E84AV□□□7524□□□ | 118 |



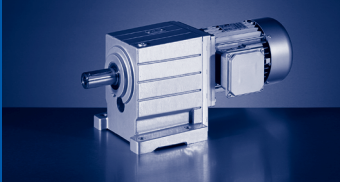
120 Hz:  $P_N = 7.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 146.5 \dots 3515 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i       |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|---------|-------------------|-----------------|-----|
| 6.4                 | 26                  | - | 154              | 315              | 450           | 1.3 | 22.778  | GST07-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 6.3                 | 26                  | - | 151              | 323              | 461           | 2.5 | 23.333  | GST09-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 6.0                 | 24                  | - | 143              | 340              | 486           | 1.2 | 24.567  | GST07-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 5.9                 | 24                  | - | 141              | 345              | 493           | 2.1 | 24.933  | GST09-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 5.3                 | 22                  | - | 126              | 386              | 552           | 1.1 | 27.917  | GST07-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 5.2                 | 21                  | - | 124              | 392              | 560           | 2.1 | 28.333  | GST09-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 4.5                 | 19                  | - | 109              | 447              | 638           | 0.9 | 32.267  | GST07-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 4.5                 | 19                  | - | 109              | 447              | 638           | 1.7 | 32.267  | GST09-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 4.5                 | 19                  | - | 109              | 447              | 638           | 2.1 | 32.267  | GST11-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 4.0                 | 16                  | - | 96               | 507              | 725           | 1.7 | 36.667  | GST09-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 4.0                 | 16                  | - | 96               | 507              | 725           | 2.1 | 36.667  | GST11-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 3.7                 | 15                  | - | 90               | 542              | 774           | 1.4 | 39.160  | GST09-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 3.7                 | 15                  | - | 90               | 542              | 774           | 1.8 | 39.160  | GST11-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 3.7                 | 15                  | - | 88               | 547              | 782           | 1.5 | 40.136  | GST09-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 3.6                 | 15                  | - | 86               | 556              | 795           | 2.7 | 40.816  | GST11-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 3.4                 | 14                  | - | 81               | 590              | 843           | 1.5 | 43.267  | GST09-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 3.3                 | 14                  | - | 80               | 600              | 857           | 2.7 | 44.000  | GST11-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 3.3                 | 14                  | - | 79               | 616              | 880           | 1.6 | 44.500  | GST09-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 3.3                 | 14                  | - | 79               | 616              | 880           | 2.0 | 44.500  | GST11-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 3.0                 | 12                  | - | 72               | 670              | 958           | 1.5 | 49.167  | GST09-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 3.0                 | 12                  | - | 71               | 685              | 979           | 1.2 | 49.500  | GST09-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 3.0                 | 12                  | - | 71               | 685              | 979           | 1.6 | 49.500  | GST11-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 2.9                 | 12                  | - | 70               | 682              | 974           | 2.7 | 50.000  | GST11-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 2.8                 | 11                  | - | 66               | 723              | 1033          | 1.3 | 53.044  | GST09-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 2.6                 | 11                  | - | 63               | 779              | 1112          | 1.2 | 56.250  | GST09-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 2.6                 | 11                  | - | 63               | 779              | 1112          | 1.6 | 56.250  | GST11-2M□□□100C32 | E84AV□□□7524□□□ | 118 |
| 2.5                 | 10                  | - | 61               | 790              | 1129          | 2.2 | 57.968  | GST11-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 2.4                 | 10                  | - | 58               | 822              | 1174          | 1.3 | 60.278  | GST09-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 2.4                 | 9.8                 | - | 57               | 835              | 1193          | 2.2 | 61.250  | GST11-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 2.1                 | 8.5                 | - | 50               | 968              | 1383          | 1.8 | 71.011  | GST11-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 2.0                 | 8.4                 | - | 49               | 980              | 1400          | 1.0 | 71.867  | GST09-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 1.8                 | 7.4                 | - | 44               | 1100             | 1571          | 1.7 | 80.694  | GST11-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 1.8                 | 7.4                 | - | 43               | 1113             | 1590          | 0.9 | 81.667  | GST09-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 1.7                 | 6.9                 | - | 40               | 1190             | 1699          | 1.5 | 87.267  | GST11-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 1.6                 | 6.4                 | - | 38               | 1275             | 1822          | 2.7 | 93.541  | GST14-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 1.5                 | 6.1                 | - | 35               | 1352             | 1931          | 1.4 | 99.167  | GST11-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 1.4                 | 5.6                 | - | 33               | 1449             | 2070          | 2.7 | 106.296 | GST14-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 1.3                 | 5.3                 | - | 31               | 1540             | 2199          | 1.2 | 112.933 | GST11-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 1.1                 | 4.7                 | - | 27               | 1760             | 2514          | 1.1 | 129.074 | GST11-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 1.1                 | 4.6                 | - | 27               | 1776             | 2537          | 2.2 | 130.278 | GST14-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 1.1                 | 4.3                 | - | 25               | 1898             | 2711          | 2.0 | 139.211 | GST14-3M□□□100C32 | E84AV□□□7524□□□ | 124 |

3



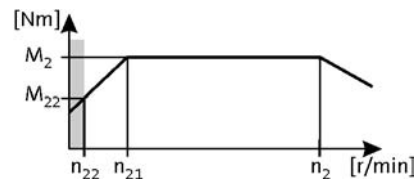
# GST

GST [Nm] - MF□MA

120 Hz:  $P_N = 7.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

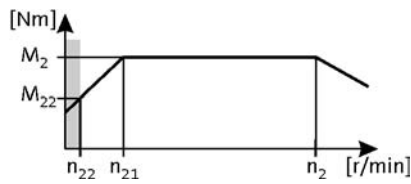
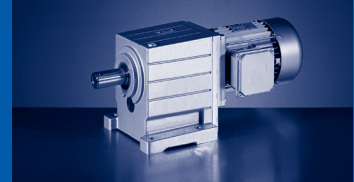
$n_1 = 146.5 \dots 3515 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 0.9      | 3.8      | - | 22      | 2156     | 3081  | 1.8 | 158.194 | GST14-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 0.9      | 3.5      | - | 21      | 2333     | 3332  | 1.7 | 171.111 | GST14-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 0.7      | 2.9      | - | 17      | 2791     | 3987  | 1.4 | 204.722 | GST14-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 0.6      | 2.5      | - | 15      | 3226     | 4608  | 1.2 | 236.622 | GST14-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 0.6      | 2.4      | - | 14      | 3387     | 4838  | 1.2 | 248.458 | GST14-3M□□□100C32 | E84AV□□□7524□□□ | 124 |
| 0.5      | 2.2      | - | 13      | 3665     | 5236  | 1.1 | 268.889 | GST14-3M□□□100C32 | E84AV□□□7524□□□ | 124 |



3



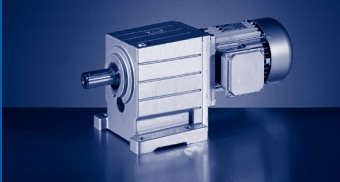
120 Hz:  $P_N = 11.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 147.1 \dots 3530 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i      |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|--------|-------------------|-----------------|-----|
| 74                  | 300                 | - | 1765             | 38               | 59            | 1.6 | 2.000  | GST07-1M□□□112C22 | E84AV□□□1134□□□ | 112 |
| 72                  | 293                 | - | 1724             | 38               | 60            | 0.9 | 2.048  | GST06-1M□□□112C22 | E84AV□□□1134□□□ | 112 |
| 72                  | 293                 | - | 1724             | 38               | 60            | 3.2 | 2.048  | GST09-1M□□□112C22 | E84AV□□□1134□□□ | 112 |
| 66                  | 268                 | - | 1576             | 42               | 66            | 1.5 | 2.240  | GST07-1M□□□112C22 | E84AV□□□1134□□□ | 112 |
| 63                  | 257                 | - | 1513             | 44               | 68            | 2.9 | 2.333  | GST09-1M□□□112C22 | E84AV□□□1134□□□ | 112 |
| 52                  | 214                 | - | 1256             | 53               | 82            | 2.5 | 2.810  | GST09-1M□□□112C22 | E84AV□□□1134□□□ | 112 |
| 52                  | 210                 | - | 1236             | 54               | 84            | 1.4 | 2.857  | GST07-1M□□□112C22 | E84AV□□□1134□□□ | 112 |
| 43                  | 174                 | - | 1025             | 65               | 101           | 2.2 | 3.444  | GST09-1M□□□112C22 | E84AV□□□1134□□□ | 112 |
| 42                  | 171                 | - | 1009             | 66               | 103           | 1.3 | 3.500  | GST07-1M□□□112C22 | E84AV□□□1134□□□ | 112 |
| 32                  | 132                 | - | 775              | 86               | 134           | 1.0 | 4.556  | GST07-1M□□□112C22 | E84AV□□□1134□□□ | 112 |
| 32                  | 129                 | - | 756              | 88               | 137           | 1.7 | 4.667  | GST09-1M□□□112C22 | E84AV□□□1134□□□ | 112 |
| 28                  | 115                 | - | 679              | 96               | 150           | 2.1 | 5.200  | GST07-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 28                  | 113                 | - | 663              | 98               | 154           | 1.0 | 5.324  | GST06-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 28                  | 113                 | - | 663              | 98               | 154           | 3.2 | 5.324  | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 26                  | 108                 | - | 632              | 105              | 164           | 0.9 | 5.583  | GST07-1M□□□112C22 | E84AV□□□1134□□□ | 112 |
| 26                  | 106                 | - | 623              | 106              | 166           | 1.5 | 5.667  | GST09-1M□□□112C22 | E84AV□□□1134□□□ | 112 |
| 26                  | 105                 | - | 618              | 106              | 165           | 2.0 | 5.714  | GST07-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 25                  | 103                 | - | 603              | 108              | 169           | 1.0 | 5.850  | GST06-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 25                  | 103                 | - | 603              | 108              | 169           | 3.2 | 5.850  | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 23                  | 94                  | - | 552              | 118              | 185           | 0.9 | 6.400  | GST06-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 23                  | 94                  | - | 552              | 118              | 185           | 1.9 | 6.400  | GST07-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 22                  | 90                  | - | 530              | 123              | 193           | 2.9 | 6.667  | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 20                  | 82                  | - | 483              | 135              | 211           | 2.5 | 7.305  | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 20                  | 82                  | - | 481              | 138              | 215           | 1.2 | 7.333  | GST09-1M□□□112C22 | E84AV□□□1134□□□ | 112 |
| 18                  | 75                  | - | 440              | 148              | 232           | 2.5 | 8.027  | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 17                  | 68                  | - | 401              | 163              | 254           | 1.6 | 8.800  | GST07-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 17                  | 67                  | - | 397              | 167              | 261           | 1.0 | 8.900  | GST09-1M□□□112C22 | E84AV□□□1134□□□ | 112 |
| 16                  | 67                  | - | 392              | 167              | 260           | 3.2 | 9.010  | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 15                  | 61                  | - | 358              | 182              | 285           | 1.5 | 9.856  | GST07-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 14                  | 58                  | - | 344              | 190              | 296           | 2.9 | 10.267 | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 13                  | 54                  | - | 315              | 207              | 323           | 1.4 | 11.200 | GST07-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 13                  | 51                  | - | 303              | 216              | 337           | 2.7 | 11.667 | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 12                  | 49                  | - | 286              | 228              | 357           | 2.5 | 12.362 | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 12                  | 48                  | - | 281              | 232              | 363           | 1.2 | 12.571 | GST07-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 12                  | 48                  | - | 281              | 232              | 363           | 3.1 | 12.571 | GST11-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 11                  | 43                  | - | 251              | 260              | 406           | 2.4 | 14.048 | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 10                  | 42                  | - | 247              | 264              | 413           | 1.2 | 14.286 | GST07-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 10                  | 42                  | - | 247              | 264              | 413           | 3.1 | 14.286 | GST11-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 9.7                 | 40                  | - | 233              | 280              | 438           | 2.5 | 15.156 | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 9.6                 | 39                  | - | 229              | 285              | 445           | 1.2 | 15.400 | GST07-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 8.5                 | 35                  | - | 205              | 318              | 497           | 2.4 | 17.222 | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |

3



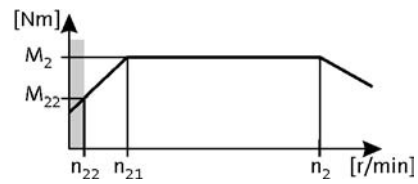
# GST

GST [Nm] - MF□MA

120 Hz:  $P_N = 11.00 \text{ kW}$

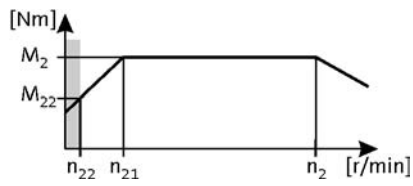
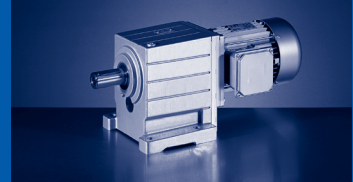
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 147.1 \dots 3530 \text{ r/min}$



| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c    | i   |        |                   |                 |     |
|---------------------|---------------------|------------------|------------------|---------------|------|-----|--------|-------------------|-----------------|-----|
| 8.4                 | 34                  | -                | 202              | 323           | 505  | 1.1 | 17.500 | GST07-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 7.3                 | 30                  | -                | 176              | 370           | 579  | 1.0 | 20.044 | GST07-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 7.3                 | 30                  | -                | 174              | 375           | 586  | 2.5 | 20.289 | GST11-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 7.2                 | 29                  | -                | 172              | 379           | 593  | 1.9 | 20.533 | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 6.4                 | 26                  | -                | 153              | 426           | 666  | 2.5 | 23.056 | GST11-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 6.3                 | 26                  | -                | 151              | 431           | 674  | 1.9 | 23.333 | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 5.9                 | 24                  | -                | 142              | 461           | 720  | 1.7 | 24.933 | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 5.9                 | 24                  | -                | 142              | 461           | 720  | 2.1 | 24.933 | GST11-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 5.2                 | 21                  | -                | 125              | 524           | 818  | 1.6 | 28.333 | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 5.2                 | 21                  | -                | 125              | 524           | 818  | 2.1 | 28.333 | GST11-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 4.6                 | 19                  | -                | 109              | 596           | 932  | 1.3 | 32.267 | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 4.6                 | 19                  | -                | 109              | 596           | 932  | 1.6 | 32.267 | GST11-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 4.6                 | 19                  | -                | 109              | 596           | 932  | 2.0 | 32.267 | GST14-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 4.0                 | 16                  | -                | 96               | 678           | 1059 | 1.2 | 36.667 | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 4.0                 | 16                  | -                | 96               | 678           | 1059 | 1.6 | 36.667 | GST11-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 4.0                 | 16                  | -                | 96               | 678           | 1059 | 2.0 | 36.667 | GST14-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 3.8                 | 15                  | -                | 90               | 724           | 1131 | 1.1 | 39.160 | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 3.8                 | 15                  | -                | 90               | 724           | 1131 | 1.4 | 39.160 | GST11-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 3.8                 | 15                  | -                | 90               | 724           | 1131 | 1.7 | 39.160 | GST14-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 3.7                 | 15                  | -                | 88               | 731           | 1142 | 1.0 | 40.136 | GST09-3M□□□112C22 | E84AV□□□1134□□□ | 124 |
| 3.6                 | 15                  | -                | 87               | 743           | 1161 | 1.9 | 40.816 | GST11-3M□□□112C22 | E84AV□□□1134□□□ | 124 |
| 3.5                 | 14                  | -                | 83               | 775           | 1211 | 3.2 | 42.580 | GST14-3M□□□112C22 | E84AV□□□1134□□□ | 124 |
| 3.4                 | 14                  | -                | 82               | 788           | 1231 | 1.0 | 43.267 | GST09-3M□□□112C22 | E84AV□□□1134□□□ | 124 |
| 3.3                 | 14                  | -                | 80               | 801           | 1251 | 1.8 | 44.000 | GST11-3M□□□112C22 | E84AV□□□1134□□□ | 124 |
| 3.3                 | 14                  | -                | 79               | 822           | 1285 | 1.1 | 44.500 | GST09-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 3.3                 | 14                  | -                | 79               | 822           | 1285 | 1.5 | 44.500 | GST11-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 3.3                 | 14                  | -                | 79               | 822           | 1285 | 1.9 | 44.500 | GST14-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 3.0                 | 12                  | -                | 73               | 881           | 1376 | 3.2 | 48.386 | GST14-3M□□□112C22 | E84AV□□□1134□□□ | 124 |
| 3.0                 | 12                  | -                | 72               | 895           | 1398 | 1.0 | 49.167 | GST09-3M□□□112C22 | E84AV□□□1134□□□ | 124 |
| 3.0                 | 12                  | -                | 71               | 915           | 1429 | 1.2 | 49.500 | GST11-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 3.0                 | 12                  | -                | 71               | 915           | 1429 | 1.5 | 49.500 | GST14-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 2.9                 | 12                  | -                | 71               | 910           | 1422 | 1.8 | 50.000 | GST11-3M□□□112C22 | E84AV□□□1134□□□ | 124 |
| 2.8                 | 11                  | -                | 66               | 967           | 1512 | 3.0 | 53.148 | GST14-3M□□□112C22 | E84AV□□□1134□□□ | 124 |
| 2.6                 | 11                  | -                | 63               | 1039          | 1624 | 1.2 | 56.250 | GST11-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 2.6                 | 11                  | -                | 63               | 1039          | 1624 | 1.5 | 56.250 | GST14-2M□□□112C22 | E84AV□□□1134□□□ | 118 |
| 2.5                 | 10                  | -                | 61               | 1055          | 1649 | 1.5 | 57.968 | GST11-3M□□□112C22 | E84AV□□□1134□□□ | 124 |
| 2.5                 | 10                  | -                | 60               | 1080          | 1687 | 2.7 | 59.321 | GST14-3M□□□112C22 | E84AV□□□1134□□□ | 124 |
| 2.4                 | 9.8                 | -                | 58               | 1115          | 1742 | 1.5 | 61.250 | GST11-3M□□□112C22 | E84AV□□□1134□□□ | 124 |
| 2.1                 | 8.7                 | -                | 51               | 1257          | 1964 | 2.4 | 69.042 | GST14-3M□□□112C22 | E84AV□□□1134□□□ | 124 |
| 2.1                 | 8.5                 | -                | 50               | 1293          | 2020 | 1.2 | 71.011 | GST11-3M□□□112C22 | E84AV□□□1134□□□ | 124 |
| 1.9                 | 7.7                 | -                | 45               | 1428          | 2231 | 2.4 | 78.457 | GST14-3M□□□112C22 | E84AV□□□1134□□□ | 124 |




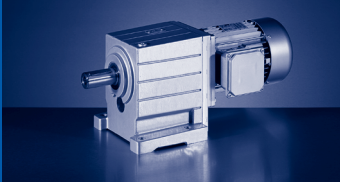


120 Hz:  $P_N = 11.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 147.1 \dots 3530 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |   |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|---|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |  |
| 1.8      | 7.4      | - | 44      | 1469     | 2295  | 1.2 | 80.694  | GST11-3M□□□112C22 | E84AV□□□1134□□□ | 124   |
| 1.7      | 6.9      | - | 41      | 1588     | 2482  | 1.0 | 87.267  | GST11-3M□□□112C22 | E84AV□□□1134□□□ | 124   |
| 1.6      | 6.4      | - | 38      | 1703     | 2660  | 2.0 | 93.541  | GST14-3M□□□112C22 | E84AV□□□1134□□□ | 124   |
| 1.5      | 6.2      | - | 37      | 1750     | 2735  | 2.0 | 96.157  | GST14-3M□□□112C22 | E84AV□□□1134□□□ | 124   |
| 1.5      | 6.1      | - | 36      | 1805     | 2820  | 0.9 | 99.167  | GST11-3M□□□112C22 | E84AV□□□1134□□□ | 124   |
| 1.4      | 5.6      | - | 33      | 1935     | 3023  | 1.9 | 106.296 | GST14-3M□□□112C22 | E84AV□□□1134□□□ | 124   |
| 1.1      | 4.6      | - | 27      | 2371     | 3705  | 1.5 | 130.278 | GST14-3M□□□112C22 | E84AV□□□1134□□□ | 124   |
| 1.1      | 4.3      | - | 25      | 2534     | 3959  | 1.4 | 139.211 | GST14-3M□□□112C22 | E84AV□□□1134□□□ | 124   |
| 0.9      | 3.8      | - | 22      | 2879     | 4499  | 1.2 | 158.194 | GST14-3M□□□112C22 | E84AV□□□1134□□□ | 124   |
| 0.9      | 3.5      | - | 21      | 3115     | 4866  | 1.2 | 171.111 | GST14-3M□□□112C22 | E84AV□□□1134□□□ | 124   |
| 0.7      | 2.9      | - | 17      | 3726     | 5822  | 1.0 | 204.722 | GST14-3M□□□112C22 | E84AV□□□1134□□□ | 124   |



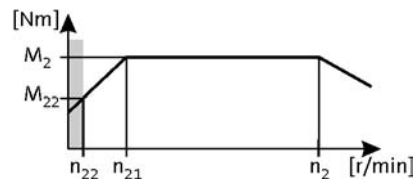
# GST

GST [Nm] - MF□MA

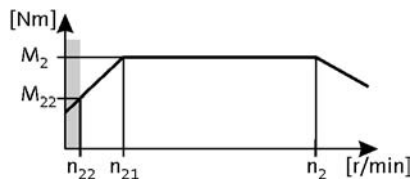
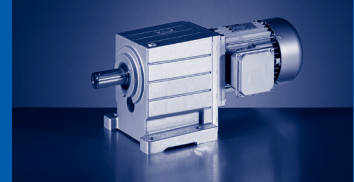
120 Hz:  $P_N = 15.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 148.3 \dots 3560 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 74       | 300      | - | 1780    | 51       | 79    | 1.2 | 2.000  | GST07-1M□□□132C12 | E84AV□□□1534□□□ | 112 |
| 72       | 293      | - | 1739    | 52       | 81    | 3.1 | 2.048  | GST09-1M□□□132C12 | E84AV□□□1534□□□ | 112 |
| 66       | 268      | - | 1589    | 57       | 89    | 1.1 | 2.240  | GST07-1M□□□132C12 | E84AV□□□1534□□□ | 112 |
| 64       | 257      | - | 1526    | 59       | 93    | 3.0 | 2.333  | GST09-1M□□□132C12 | E84AV□□□1534□□□ | 112 |
| 53       | 214      | - | 1267    | 71       | 111   | 2.8 | 2.810  | GST09-1M□□□132C12 | E84AV□□□1534□□□ | 112 |
| 52       | 210      | - | 1246    | 73       | 113   | 1.1 | 2.857  | GST07-1M□□□132C12 | E84AV□□□1534□□□ | 112 |
| 43       | 174      | - | 1034    | 87       | 137   | 2.4 | 3.444  | GST09-1M□□□132C12 | E84AV□□□1534□□□ | 112 |
| 42       | 171      | - | 1017    | 89       | 139   | 0.9 | 3.500  | GST07-1M□□□132C12 | E84AV□□□1534□□□ | 112 |
| 32       | 129      | - | 763     | 118      | 185   | 1.5 | 4.667  | GST09-1M□□□132C12 | E84AV□□□1534□□□ | 112 |
| 29       | 115      | - | 685     | 130      | 203   | 1.6 | 5.200  | GST07-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 26       | 106      | - | 628     | 144      | 225   | 1.6 | 5.667  | GST09-1M□□□132C12 | E84AV□□□1534□□□ | 112 |
| 26       | 105      | - | 623     | 143      | 223   | 1.5 | 5.714  | GST07-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 23       | 94       | - | 556     | 160      | 250   | 1.4 | 6.400  | GST07-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 22       | 90       | - | 534     | 167      | 260   | 3.1 | 6.667  | GST09-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 20       | 82       | - | 487     | 183      | 285   | 2.9 | 7.305  | GST09-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 19       | 75       | - | 444     | 201      | 313   | 2.7 | 8.027  | GST09-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 17       | 68       | - | 405     | 220      | 344   | 1.2 | 8.800  | GST07-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 17       | 67       | - | 395     | 225      | 352   | 2.4 | 9.010  | GST09-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 15       | 61       | - | 361     | 246      | 385   | 1.1 | 9.856  | GST07-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 14       | 58       | - | 347     | 257      | 401   | 2.2 | 10.267 | GST09-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 13       | 54       | - | 318     | 280      | 437   | 1.0 | 11.200 | GST07-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 13       | 51       | - | 305     | 292      | 456   | 2.0 | 11.667 | GST09-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 12       | 49       | - | 288     | 309      | 483   | 1.9 | 12.362 | GST09-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 12       | 48       | - | 283     | 314      | 491   | 0.9 | 12.571 | GST07-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 11       | 43       | - | 253     | 351      | 548   | 1.8 | 14.048 | GST09-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 9.8      | 40       | - | 235     | 379      | 592   | 1.9 | 15.156 | GST09-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 9.6      | 39       | - | 231     | 385      | 601   | 0.9 | 15.400 | GST07-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 8.6      | 35       | - | 207     | 430      | 672   | 1.7 | 17.222 | GST09-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 7.3      | 30       | - | 176     | 507      | 792   | 3.0 | 20.289 | GST11-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 7.2      | 29       | - | 173     | 513      | 802   | 1.6 | 20.533 | GST09-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 6.4      | 26       | - | 154     | 576      | 900   | 2.8 | 23.056 | GST11-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 6.4      | 26       | - | 153     | 583      | 911   | 1.4 | 23.333 | GST09-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 6.0      | 24       | - | 143     | 623      | 973   | 1.4 | 24.933 | GST09-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 6.0      | 24       | - | 143     | 623      | 973   | 2.4 | 24.933 | GST11-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 5.2      | 21       | - | 126     | 708      | 1106  | 1.2 | 28.333 | GST09-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 5.2      | 21       | - | 126     | 708      | 1106  | 2.3 | 28.333 | GST11-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 4.6      | 19       | - | 110     | 806      | 1260  | 1.9 | 32.267 | GST11-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 4.6      | 19       | - | 110     | 806      | 1260  | 3.2 | 32.267 | GST14-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 4.1      | 16       | - | 97      | 916      | 1432  | 1.7 | 36.667 | GST11-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 4.1      | 16       | - | 97      | 916      | 1432  | 3.2 | 36.667 | GST14-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 3.8      | 15       | - | 91      | 979      | 1529  | 1.6 | 39.160 | GST11-2M□□□132C12 | E84AV□□□1534□□□ | 118 |



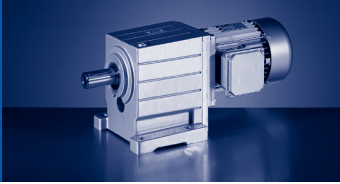
120 Hz:  $P_N = 15.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 148.3 \dots 3560 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 3.8      | 15       | - | 91      | 979      | 1529  | 2.7 | 39.160  | GST14-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 3.7      | 15       | - | 89      | 989      | 1545  | 2.5 | 40.185  | GST14-3M□□□132C12 | E84AV□□□1534□□□ | 124 |
| 3.6      | 15       | - | 87      | 1005     | 1570  | 1.4 | 40.816  | GST11-3M□□□132C12 | E84AV□□□1534□□□ | 124 |
| 3.5      | 14       | - | 84      | 1048     | 1637  | 2.5 | 42.580  | GST14-3M□□□132C12 | E84AV□□□1534□□□ | 124 |
| 3.4      | 14       | - | 81      | 1083     | 1692  | 1.3 | 44.000  | GST11-3M□□□132C12 | E84AV□□□1534□□□ | 124 |
| 3.3      | 14       | - | 80      | 1112     | 1737  | 1.6 | 44.500  | GST11-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 3.3      | 14       | - | 80      | 1112     | 1737  | 3.0 | 44.500  | GST14-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 3.1      | 12       | - | 74      | 1191     | 1861  | 2.5 | 48.386  | GST14-3M□□□132C12 | E84AV□□□1534□□□ | 124 |
| 3.0      | 12       | - | 72      | 1237     | 1933  | 2.1 | 49.500  | GST14-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 3.0      | 12       | - | 71      | 1231     | 1923  | 1.3 | 50.000  | GST11-3M□□□132C12 | E84AV□□□1534□□□ | 124 |
| 2.8      | 11       | - | 67      | 1308     | 2044  | 2.2 | 53.148  | GST14-3M□□□132C12 | E84AV□□□1534□□□ | 124 |
| 2.6      | 11       | - | 63      | 1406     | 2196  | 2.1 | 56.250  | GST14-2M□□□132C12 | E84AV□□□1534□□□ | 118 |
| 2.6      | 10       | - | 61      | 1427     | 2229  | 1.1 | 57.968  | GST11-3M□□□132C12 | E84AV□□□1534□□□ | 124 |
| 2.5      | 10       | - | 60      | 1460     | 2281  | 2.2 | 59.321  | GST14-3M□□□132C12 | E84AV□□□1534□□□ | 124 |
| 2.4      | 9.8      | - | 58      | 1507     | 2355  | 1.1 | 61.250  | GST11-3M□□□132C12 | E84AV□□□1534□□□ | 124 |
| 2.2      | 8.7      | - | 52      | 1699     | 2655  | 1.7 | 69.042  | GST14-3M□□□132C12 | E84AV□□□1534□□□ | 124 |
| 2.1      | 8.5      | - | 50      | 1748     | 2731  | 0.9 | 71.011  | GST11-3M□□□132C12 | E84AV□□□1534□□□ | 124 |
| 1.9      | 7.7      | - | 45      | 1931     | 3017  | 1.7 | 78.457  | GST14-3M□□□132C12 | E84AV□□□1534□□□ | 124 |
| 1.6      | 6.4      | - | 38      | 2302     | 3597  | 1.5 | 93.541  | GST14-3M□□□132C12 | E84AV□□□1534□□□ | 124 |
| 1.5      | 6.2      | - | 37      | 2367     | 3698  | 1.5 | 96.157  | GST14-3M□□□132C12 | E84AV□□□1534□□□ | 124 |
| 1.4      | 5.6      | - | 34      | 2616     | 4088  | 1.4 | 106.296 | GST14-3M□□□132C12 | E84AV□□□1534□□□ | 124 |
| 1.1      | 4.6      | - | 27      | 3206     | 5010  | 1.1 | 130.278 | GST14-3M□□□132C12 | E84AV□□□1534□□□ | 124 |
| 1.1      | 4.3      | - | 26      | 3426     | 5353  | 1.0 | 139.211 | GST14-3M□□□132C12 | E84AV□□□1534□□□ | 124 |
| 0.9      | 3.8      | - | 23      | 3893     | 6083  | 0.9 | 158.194 | GST14-3M□□□132C12 | E84AV□□□1534□□□ | 124 |

3



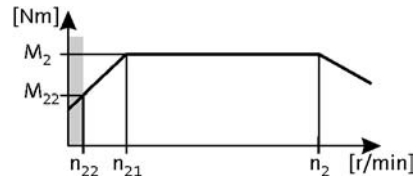
# GST

GST [Nm] - MF□MA

120 Hz:  $P_N = 18.50 \text{ kW}$

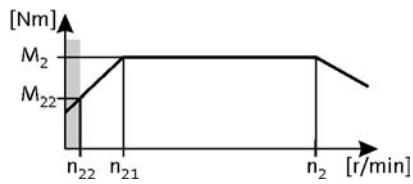
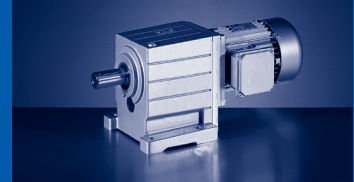
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 148.3 \dots 3560 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 74       | 300      | - | 1780    | 63       | 98    | 0.9 | 2.000  | GST07-1M□□□132C22 | E84AV□□□1834□□□ | 112 |
| 72       | 293      | - | 1739    | 64       | 100   | 2.5 | 2.048  | GST09-1M□□□132C22 | E84AV□□□1834□□□ | 112 |
| 66       | 268      | - | 1589    | 70       | 110   | 0.9 | 2.240  | GST07-1M□□□132C22 | E84AV□□□1834□□□ | 112 |
| 64       | 257      | - | 1526    | 73       | 114   | 2.4 | 2.333  | GST09-1M□□□132C22 | E84AV□□□1834□□□ | 112 |
| 53       | 214      | - | 1267    | 88       | 137   | 2.3 | 2.810  | GST09-1M□□□132C22 | E84AV□□□1834□□□ | 112 |
| 43       | 174      | - | 1034    | 108      | 168   | 2.0 | 3.444  | GST09-1M□□□132C22 | E84AV□□□1834□□□ | 112 |
| 32       | 129      | - | 763     | 146      | 228   | 1.2 | 4.667  | GST09-1M□□□132C22 | E84AV□□□1834□□□ | 112 |
| 29       | 115      | - | 685     | 160      | 250   | 1.3 | 5.200  | GST07-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 28       | 113      | - | 669     | 164      | 256   | 2.9 | 5.324  | GST09-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 26       | 106      | - | 628     | 177      | 277   | 1.3 | 5.667  | GST09-1M□□□132C22 | E84AV□□□1834□□□ | 112 |
| 26       | 105      | - | 623     | 176      | 275   | 1.2 | 5.714  | GST07-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 25       | 103      | - | 609     | 180      | 282   | 2.7 | 5.850  | GST09-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 23       | 94       | - | 556     | 197      | 308   | 1.1 | 6.400  | GST07-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 22       | 90       | - | 534     | 205      | 321   | 2.5 | 6.667  | GST09-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 20       | 82       | - | 487     | 225      | 352   | 2.4 | 7.305  | GST09-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 19       | 75       | - | 444     | 247      | 387   | 2.2 | 8.027  | GST09-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 17       | 68       | - | 405     | 271      | 424   | 0.9 | 8.800  | GST07-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 17       | 67       | - | 395     | 278      | 434   | 1.9 | 9.010  | GST09-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 14       | 58       | - | 347     | 316      | 494   | 1.8 | 10.267 | GST09-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 13       | 51       | - | 305     | 360      | 562   | 1.6 | 11.667 | GST09-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 12       | 49       | - | 288     | 381      | 595   | 1.6 | 12.362 | GST09-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 12       | 48       | - | 283     | 387      | 605   | 3.1 | 12.571 | GST11-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 11       | 43       | - | 253     | 433      | 676   | 1.4 | 14.048 | GST09-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 10       | 42       | - | 249     | 440      | 688   | 2.8 | 14.286 | GST11-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 9.8      | 40       | - | 235     | 467      | 730   | 1.6 | 15.156 | GST09-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 9.6      | 39       | - | 231     | 475      | 742   | 3.1 | 15.400 | GST11-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 8.6      | 35       | - | 207     | 531      | 829   | 1.4 | 17.222 | GST09-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 8.5      | 34       | - | 203     | 539      | 843   | 2.8 | 17.500 | GST11-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 7.3      | 30       | - | 176     | 625      | 977   | 2.4 | 20.289 | GST11-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 7.2      | 29       | - | 173     | 633      | 989   | 1.3 | 20.533 | GST09-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 6.4      | 26       | - | 154     | 711      | 1110  | 2.2 | 23.056 | GST11-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 6.4      | 26       | - | 153     | 719      | 1124  | 1.1 | 23.333 | GST09-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 6.0      | 24       | - | 145     | 757      | 1183  | 3.2 | 24.567 | GST14-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 6.0      | 24       | - | 143     | 768      | 1201  | 1.1 | 24.933 | GST09-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 6.0      | 24       | - | 143     | 768      | 1201  | 2.0 | 24.933 | GST11-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 5.3      | 22       | - | 128     | 860      | 1344  | 3.2 | 27.917 | GST14-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 5.2      | 21       | - | 126     | 873      | 1364  | 0.9 | 28.333 | GST09-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 5.2      | 21       | - | 126     | 873      | 1364  | 1.8 | 28.333 | GST11-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 4.6      | 19       | - | 110     | 994      | 1554  | 1.5 | 32.267 | GST11-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 4.6      | 19       | - | 110     | 994      | 1554  | 2.6 | 32.267 | GST14-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 4.1      | 16       | - | 97      | 1130     | 1766  | 1.4 | 36.667 | GST11-2M□□□132C22 | E84AV□□□1834□□□ | 118 |

3

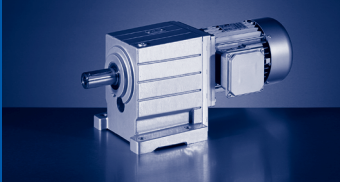


120 Hz:  $P_N = 18.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 148.3 \dots 3560 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 4.1      | 16       | - | 97      | 1130     | 1766  | 2.6 | 36.667  | GST14-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 3.8      | 15       | - | 91      | 1207     | 1886  | 1.3 | 39.160  | GST11-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 3.8      | 15       | - | 91      | 1207     | 1886  | 2.2 | 39.160  | GST14-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 3.7      | 15       | - | 89      | 1220     | 1906  | 2.0 | 40.185  | GST14-3M□□□132C22 | E84AV□□□1834□□□ | 124 |
| 3.6      | 15       | - | 87      | 1239     | 1936  | 1.1 | 40.816  | GST11-3M□□□132C22 | E84AV□□□1834□□□ | 124 |
| 3.5      | 14       | - | 84      | 1293     | 2020  | 2.0 | 42.580  | GST14-3M□□□132C22 | E84AV□□□1834□□□ | 124 |
| 3.4      | 14       | - | 81      | 1336     | 2087  | 1.1 | 44.000  | GST11-3M□□□132C22 | E84AV□□□1834□□□ | 124 |
| 3.3      | 14       | - | 80      | 1371     | 2143  | 1.3 | 44.500  | GST11-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 3.3      | 14       | - | 80      | 1371     | 2143  | 2.4 | 44.500  | GST14-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 3.1      | 12       | - | 74      | 1469     | 2295  | 2.0 | 48.386  | GST14-3M□□□132C22 | E84AV□□□1834□□□ | 124 |
| 3.0      | 12       | - | 72      | 1525     | 2383  | 1.7 | 49.500  | GST14-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 3.0      | 12       | - | 71      | 1518     | 2371  | 1.1 | 50.000  | GST11-3M□□□132C22 | E84AV□□□1834□□□ | 124 |
| 2.8      | 11       | - | 67      | 1613     | 2521  | 1.8 | 53.148  | GST14-3M□□□132C22 | E84AV□□□1834□□□ | 124 |
| 2.6      | 11       | - | 63      | 1733     | 2708  | 1.7 | 56.250  | GST14-2M□□□132C22 | E84AV□□□1834□□□ | 118 |
| 2.5      | 10       | - | 60      | 1801     | 2814  | 1.8 | 59.321  | GST14-3M□□□132C22 | E84AV□□□1834□□□ | 124 |
| 2.2      | 8.7      | - | 52      | 2096     | 3275  | 1.4 | 69.042  | GST14-3M□□□132C22 | E84AV□□□1834□□□ | 124 |
| 1.9      | 7.7      | - | 45      | 2382     | 3721  | 1.4 | 78.457  | GST14-3M□□□132C22 | E84AV□□□1834□□□ | 124 |
| 1.6      | 6.4      | - | 38      | 2839     | 4436  | 1.2 | 93.541  | GST14-3M□□□132C22 | E84AV□□□1834□□□ | 124 |
| 1.5      | 6.2      | - | 37      | 2919     | 4561  | 1.2 | 96.157  | GST14-3M□□□132C22 | E84AV□□□1834□□□ | 124 |
| 1.4      | 5.6      | - | 34      | 3227     | 5041  | 1.1 | 106.296 | GST14-3M□□□132C22 | E84AV□□□1834□□□ | 124 |
| 1.1      | 4.6      | - | 27      | 3954     | 6179  | 0.9 | 130.278 | GST14-3M□□□132C22 | E84AV□□□1834□□□ | 124 |



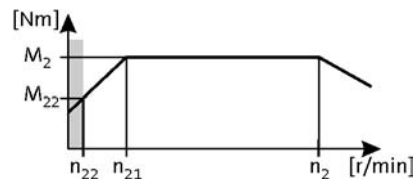
# GST

GST [Nm] - MF□MA

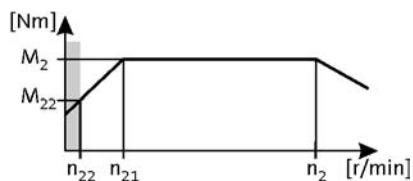
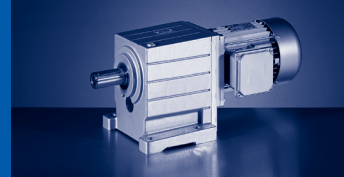
120 Hz:  $P_N = 22.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 147.9 \dots 3550 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 72       | 293      | - | 1734    | 76       | 119   | 2.1 | 2.048  | GST09-1M□□□132C32 | E84AV□□□2234□□□ | 112 |
| 63       | 257      | - | 1521    | 87       | 136   | 2.0 | 2.333  | GST09-1M□□□132C32 | E84AV□□□2234□□□ | 112 |
| 53       | 214      | - | 1264    | 105      | 164   | 1.9 | 2.810  | GST09-1M□□□132C32 | E84AV□□□2234□□□ | 112 |
| 43       | 174      | - | 1031    | 129      | 201   | 1.7 | 3.444  | GST09-1M□□□132C32 | E84AV□□□2234□□□ | 112 |
| 32       | 129      | - | 761     | 174      | 272   | 1.0 | 4.667  | GST09-1M□□□132C32 | E84AV□□□2234□□□ | 112 |
| 28       | 113      | - | 667     | 196      | 306   | 2.4 | 5.324  | GST09-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 26       | 106      | - | 627     | 211      | 330   | 1.1 | 5.667  | GST09-1M□□□132C32 | E84AV□□□2234□□□ | 112 |
| 25       | 103      | - | 607     | 215      | 336   | 2.3 | 5.850  | GST09-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 23       | 94       | - | 555     | 235      | 368   | 3.2 | 6.400  | GST11-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 22       | 90       | - | 533     | 245      | 383   | 2.1 | 6.667  | GST09-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 20       | 82       | - | 486     | 268      | 419   | 2.0 | 7.305  | GST09-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 18       | 75       | - | 442     | 295      | 461   | 1.8 | 8.027  | GST09-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 16       | 67       | - | 394     | 331      | 517   | 1.6 | 9.010  | GST09-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 15       | 61       | - | 360     | 362      | 566   | 3.1 | 9.856  | GST11-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 14       | 58       | - | 346     | 377      | 590   | 1.5 | 10.267 | GST09-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 13       | 54       | - | 317     | 412      | 643   | 2.8 | 11.200 | GST11-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 13       | 51       | - | 304     | 429      | 670   | 1.4 | 11.667 | GST09-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 12       | 49       | - | 287     | 454      | 710   | 1.3 | 12.362 | GST09-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 12       | 48       | - | 282     | 462      | 722   | 2.6 | 12.571 | GST11-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 11       | 43       | - | 253     | 516      | 807   | 1.2 | 14.048 | GST09-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 10       | 42       | - | 249     | 525      | 820   | 2.4 | 14.286 | GST11-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 9.8      | 40       | - | 234     | 557      | 870   | 1.3 | 15.156 | GST09-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 9.6      | 39       | - | 231     | 566      | 884   | 2.6 | 15.400 | GST11-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 8.6      | 35       | - | 206     | 633      | 989   | 1.2 | 17.222 | GST09-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 8.5      | 34       | - | 203     | 643      | 1005  | 2.3 | 17.500 | GST11-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 7.4      | 30       | - | 177     | 737      | 1151  | 2.9 | 20.044 | GST14-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 7.3      | 30       | - | 175     | 746      | 1165  | 2.0 | 20.289 | GST11-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 7.2      | 29       | - | 173     | 755      | 1179  | 1.1 | 20.533 | GST09-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 6.5      | 26       | - | 156     | 837      | 1308  | 2.9 | 22.778 | GST14-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 6.4      | 26       | - | 154     | 847      | 1324  | 1.9 | 23.056 | GST11-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 6.3      | 26       | - | 152     | 858      | 1340  | 1.0 | 23.333 | GST09-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 6.0      | 24       | - | 145     | 903      | 1411  | 2.7 | 24.567 | GST14-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 5.9      | 24       | - | 142     | 916      | 1432  | 0.9 | 24.933 | GST09-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 5.9      | 24       | - | 142     | 916      | 1432  | 1.7 | 24.933 | GST11-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 5.3      | 22       | - | 127     | 1026     | 1603  | 2.7 | 27.917 | GST14-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 5.2      | 21       | - | 125     | 1041     | 1627  | 1.5 | 28.333 | GST11-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 4.6      | 19       | - | 110     | 1186     | 1853  | 1.3 | 32.267 | GST11-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 4.6      | 19       | - | 110     | 1186     | 1853  | 2.2 | 32.267 | GST14-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 4.0      | 16       | - | 97      | 1348     | 2105  | 1.2 | 36.667 | GST11-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 4.0      | 16       | - | 97      | 1348     | 2105  | 2.2 | 36.667 | GST14-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 3.8      | 15       | - | 91      | 1439     | 2249  | 1.1 | 39.160 | GST11-2M□□□132C32 | E84AV□□□2234□□□ | 118 |

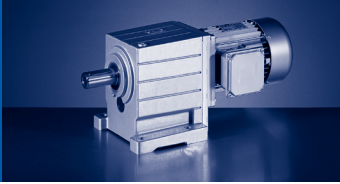


120 Hz:  $P_N = 22.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

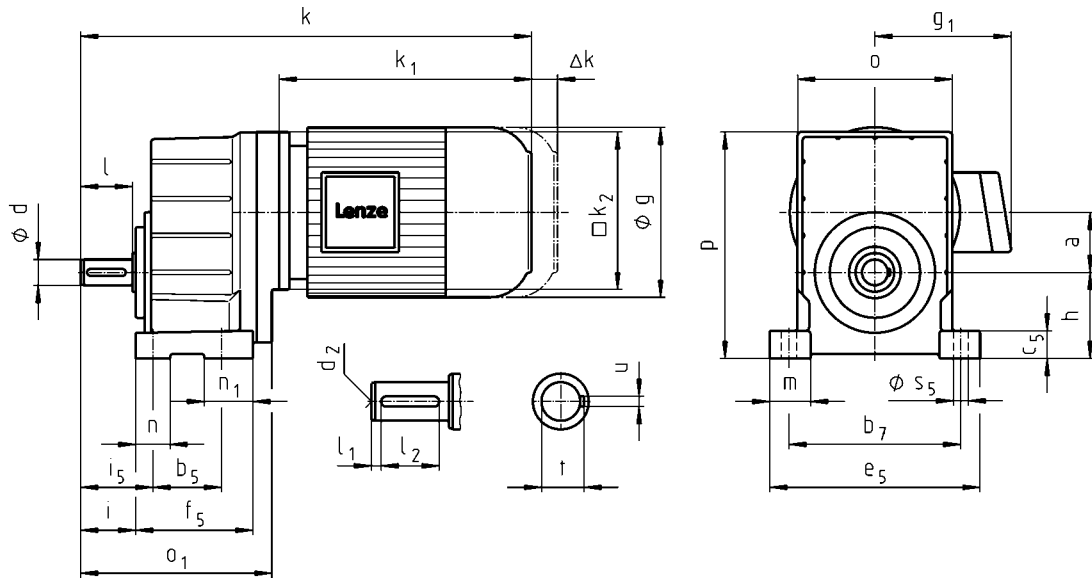
$n_1 = 147.9 \dots 3550 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | $c$ | $i$     |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|---------|-------------------|-----------------|-----|
| 3.8                 | 15                  | - | 91               | 1439             | 2249          | 1.8 | 39.160  | GST14-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 3.7                 | 15                  | - | 88               | 1455             | 2273          | 1.7 | 40.185  | GST14-3M□□□132C32 | E84AV□□□2234□□□ | 124 |
| 3.6                 | 15                  | - | 87               | 1478             | 2309          | 0.9 | 40.816  | GST11-3M□□□132C32 | E84AV□□□2234□□□ | 124 |
| 3.5                 | 14                  | - | 83               | 1541             | 2408          | 1.7 | 42.580  | GST14-3M□□□132C32 | E84AV□□□2234□□□ | 124 |
| 3.4                 | 14                  | - | 81               | 1593             | 2489          | 0.9 | 44.000  | GST11-3M□□□132C32 | E84AV□□□2234□□□ | 124 |
| 3.3                 | 14                  | - | 80               | 1635             | 2555          | 1.1 | 44.500  | GST11-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 3.3                 | 14                  | - | 80               | 1635             | 2555          | 2.0 | 44.500  | GST14-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 3.1                 | 12                  | - | 73               | 1752             | 2737          | 1.7 | 48.386  | GST14-3M□□□132C32 | E84AV□□□2234□□□ | 124 |
| 3.0                 | 12                  | - | 72               | 1819             | 2842          | 1.4 | 49.500  | GST14-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 3.0                 | 12                  | - | 71               | 1810             | 2828          | 0.9 | 50.000  | GST11-3M□□□132C32 | E84AV□□□2234□□□ | 124 |
| 2.8                 | 11                  | - | 67               | 1924             | 3006          | 1.5 | 53.148  | GST14-3M□□□132C32 | E84AV□□□2234□□□ | 124 |
| 2.6                 | 11                  | - | 63               | 2067             | 3230          | 1.4 | 56.250  | GST14-2M□□□132C32 | E84AV□□□2234□□□ | 118 |
| 2.5                 | 10                  | - | 60               | 2147             | 3355          | 1.5 | 59.321  | GST14-3M□□□132C32 | E84AV□□□2234□□□ | 124 |
| 2.1                 | 8.7                 | - | 51               | 2499             | 3905          | 1.2 | 69.042  | GST14-3M□□□132C32 | E84AV□□□2234□□□ | 124 |
| 1.9                 | 7.7                 | - | 45               | 2840             | 4438          | 1.2 | 78.457  | GST14-3M□□□132C32 | E84AV□□□2234□□□ | 124 |
| 1.6                 | 6.4                 | - | 38               | 3386             | 5291          | 1.0 | 93.541  | GST14-3M□□□132C32 | E84AV□□□2234□□□ | 124 |
| 1.5                 | 6.2                 | - | 37               | 3481             | 5439          | 1.0 | 96.157  | GST14-3M□□□132C32 | E84AV□□□2234□□□ | 124 |
| 1.4                 | 5.6                 | - | 33               | 3848             | 6012          | 0.9 | 106.296 | GST14-3M□□□132C32 | E84AV□□□2234□□□ | 124 |



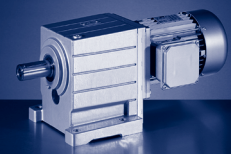
**GST**  
GST [mm] - MF□MA

**GST□□-1M VBR**



3



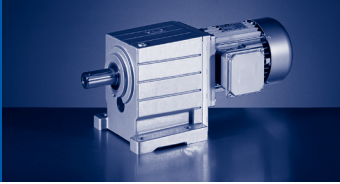


|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|----------------------|---------|------------------|------------------|------------------|--------|------------------|--------|------------------|--------|
| <b>g</b>             |         | 123              | 139              | 156              | 176    | 194              | 218    |                  | 258    |
| <b>B1</b>            | MFEMAXX | 100              | 109              | 141              | 146    | 157              | 167    |                  | 195    |
|                      | MFEMABR | 107              | 118              | 132              | 137    | 147              | 158    |                  | 187    |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              | 224.5            | 274    | 324              | 363    |                  | 403    |
| <b>k<sub>2</sub></b> |         | 120              |                  | 145              |        | 180              |        | 222              | 265    |
|                      | MFEMABR | 40               | 52               | 73               | 68     | 76               | 90     |                  | 109.5  |
| <b>Δ k</b>           | MFEMAXX |                  |                  | 128              |        | 109              | 102    |                  | 115    |
|                      | MFEMABR | 170              | 165              | 183              | 181    | 170              | 183    |                  | 201.5  |
| <b>k</b>             |         |                  |                  |                  |        |                  |        |                  |        |
| <b>GST04</b>         |         | 331              | 351              | 373              |        |                  |        |                  |        |
| <b>GST05</b>         |         | 352              | 372              | 394              | 454    | 504              |        |                  |        |
| <b>GST06</b>         |         | 375              | 395              | 417              | 477    | 527              | 572    |                  |        |
| <b>GST07</b>         |         |                  |                  | 446              | 506    | 556              | 601    | 649              |        |
| <b>GST09</b>         |         |                  |                  |                  | 549    | 599              | 644    |                  | 692    |

|              | a  | h <sup>1)</sup> | o <sup>1)</sup> | p <sup>1)</sup> |
|--------------|----|-----------------|-----------------|-----------------|
| <b>GST04</b> | 36 | 50              | 100             | 138             |
| <b>GST05</b> | 45 | 63              | 115             | 168             |
| <b>GST06</b> | 56 | 80              | 145             | 211             |
| <b>GST07</b> | 70 | 100             | 180             | 264             |
| <b>GST09</b> | 89 | 125             | 222             | 329             |

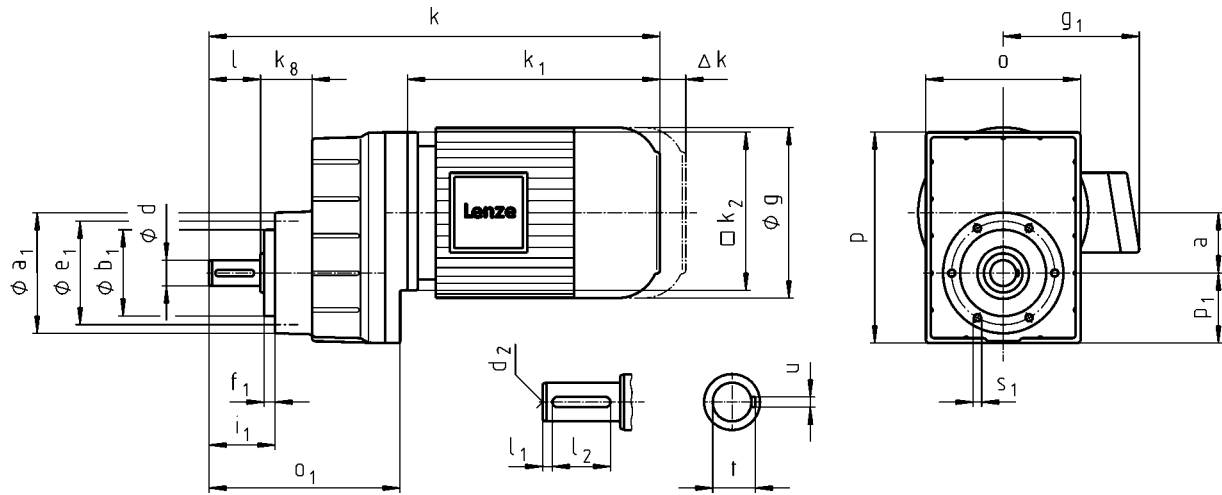
|              | d  | d <sub>2</sub> | l  | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i  | i <sub>5</sub> | o <sub>1</sub> | b <sub>5</sub> | b <sub>7</sub> | c <sub>5</sub> | e <sub>5</sub> | f <sub>5</sub> | m  | n  | n <sub>1</sub> | s <sub>5</sub> |
|--------------|----|----------------|----|----------------|----------------|----|------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|----|----------------|----------------|
|              | k6 |                |    |                |                |    |      |    |                |                |                |                |                |                |                |    |    |                |                |
| <b>GST04</b> | 16 | M5             | 32 | 6              | 20             | 5  | 18   | 35 | 45             | 134            | 55             | 105            | 17             | 128            | 80             | 24 | 20 | 25             | 9              |
| <b>GST05</b> | 20 | M6             | 40 | 6              | 28             | 6  | 22.5 | 43 | 56             | 165            | 70             | 125            | 22             | 154            | 99             | 32 | 26 | 29             | 11             |
| <b>GST06</b> | 25 | M10            | 50 | 4              | 40             | 8  | 28   | 53 | 68             | 191            | 72             | 160            | 27             | 194            | 115            | 37 | 30 | 43             | 13.5           |
| <b>GST07</b> | 30 | M10            | 60 | 7.5            | 45             | 8  | 33   | 64 | 84             | 223            | 80             | 200            | 35             | 245            | 137            | 48 | 40 | 57             | 18             |
| <b>GST09</b> | 40 | M16            | 80 | 8.5            | 63             | 12 | 43   | 84 | 107            | 271            | 105            | 245            | 43             | 296            | 161            | 51 | 45 | 56             | 18             |

<sup>1)</sup> k<sub>2</sub> !

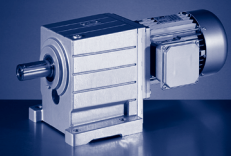


**GST**  
GST [mm] - MF□MA

**GST□□-1M VCR**



3

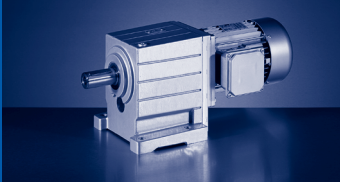


|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|----------------------|---------|------------------|------------------|------------------|--------|------------------|--------|------------------|--------|
| <b>g</b>             |         | 123              | 139              | 156              | 176    | 194              | 218    |                  | 258    |
| <b>B1</b>            | MFEMAXX | 100              | 109              | 141              | 146    | 157              | 167    |                  | 195    |
|                      | MFEMABR | 107              | 118              | 132              | 137    | 147              | 158    |                  | 187    |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              | 224.5            | 274    | 324              | 363    |                  | 403    |
| <b>k<sub>2</sub></b> |         | 120              |                  | 145              |        | 180              |        | 222              | 265    |
|                      | MFEMABR | 40               | 52               | 73               | 68     | 76               | 90     |                  | 109.5  |
| <b>Δ k</b>           | MFFMAXX |                  |                  | 128              |        | 109              | 102    |                  | 115    |
|                      | MFFMABR | 170              | 165              | 183              | 181    | 170              | 183    |                  | 201.5  |
| <b>k</b>             |         |                  |                  |                  |        |                  |        |                  |        |
| <b>GST04</b>         |         | 331              | 351              | 373              |        |                  |        |                  |        |
| <b>GST05</b>         |         | 352              | 372              | 394              | 454    | 504              |        |                  |        |
| <b>GST06</b>         |         | 375              | 395              | 417              | 477    | 527              | 572    |                  |        |
| <b>GST07</b>         |         |                  |                  | 446              | 506    | 556              | 601    | 649              |        |
| <b>GST09</b>         |         |                  |                  |                  | 549    | 599              | 644    |                  | 692    |

|              | a  | k <sub>g</sub> | o <sup>1)</sup> | p <sup>1)</sup> | P <sub>1</sub> |
|--------------|----|----------------|-----------------|-----------------|----------------|
| <b>GST04</b> | 36 | 35             | 100             | 129             | 41             |
| <b>GST05</b> | 45 | 43             | 115             | 156             | 51             |
| <b>GST06</b> | 56 | 48             | 145             | 194             | 63             |
| <b>GST07</b> | 70 | 60             | 180             | 245             | 82             |
| <b>GST09</b> | 89 | 74             | 222             | 304             | 101            |

|              | d  | d <sub>2</sub> | l  | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i <sub>1</sub> | o <sub>1</sub> | a <sub>1</sub> | b <sub>1</sub> | e <sub>1</sub> | f <sub>1</sub> | s <sub>1</sub> |
|--------------|----|----------------|----|----------------|----------------|----|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | k6 |                |    |                |                |    |      |                |                |                | h7             |                |                |                |
| <b>GST04</b> | 16 | M5             | 32 | 6              | 20             | 5  | 18   | 43             | 134            | 72             | 48             | 61             | 8              | M5x10          |
| <b>GST05</b> | 20 | M6             | 40 | 6              | 28             | 6  | 22.5 | 52             | 165            | 88             | 58             | 74             | 9              | M6x10          |
| <b>GST06</b> | 25 | M10            | 50 | 4              | 40             | 8  | 28   | 64             | 191            | 109            | 70             | 90             | 11             | M8x14          |
| <b>GST07</b> | 30 | M10            | 60 | 7.5            | 45             | 8  | 33   | 77             | 223            | 140            | 100            | 120            | 13             | M10x18         |
| <b>GST09</b> | 40 | M16            | 80 | 8.5            | 63             | 12 | 43   | 100            | 271            | 174            | 120            | 145            | 15             | M12x20         |

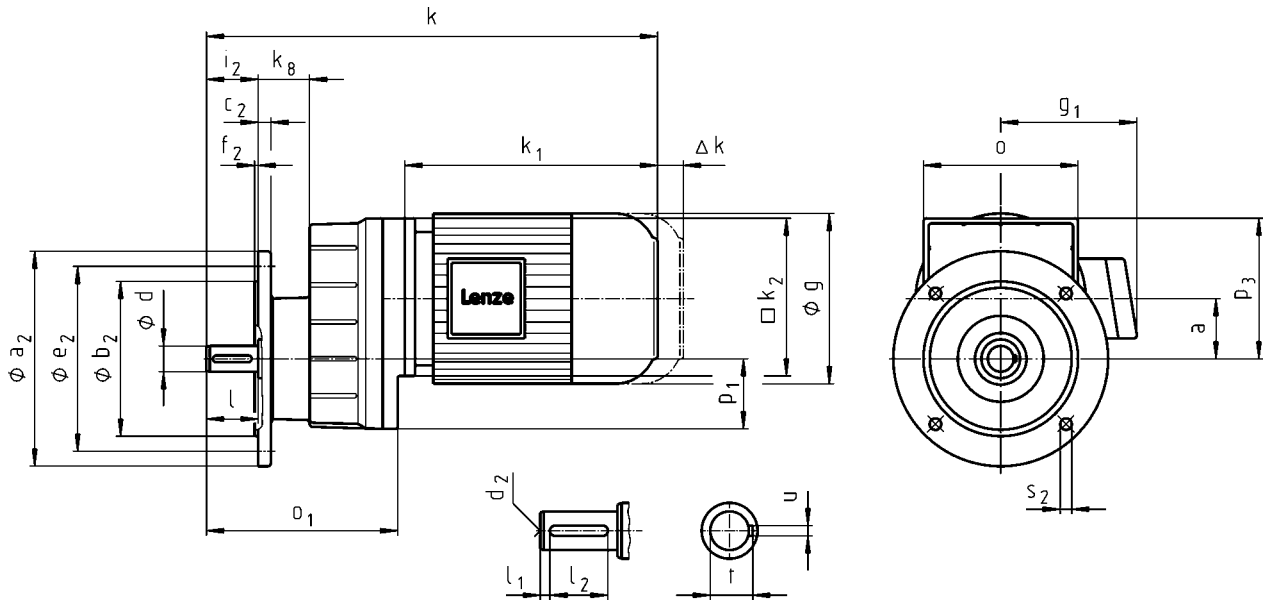
<sup>1)</sup> k<sub>2</sub> !



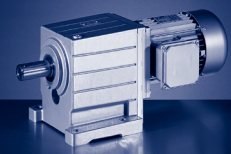
# GST

GST [mm] - MF□MA

## GST□□-1M VCK



3

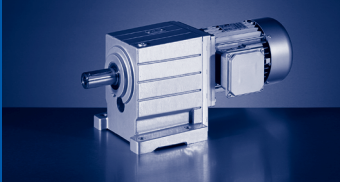


|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|----------------------|---------|------------------|------------------|------------------|--------|------------------|--------|------------------|--------|
| <b>g</b>             |         | 123              | 139              | 156              | 176    | 194              | 218    | 258              |        |
| <b>B1</b>            | MFEMAXX | 100              | 109              | 141              | 146    | 157              | 167    | 195              |        |
|                      | MFEMABR | 107              | 118              | 132              | 137    | 147              | 158    | 187              |        |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              | 224.5            | 274    | 324              | 363    | 403              |        |
| <b>k<sub>2</sub></b> |         | 120              |                  | 145              | 180    |                  | 222    | 265              |        |
|                      | MFEMABR | 40               | 52               | 73               | 68     | 76               | 90     | 109.5            |        |
| <b>Δ k</b>           | MFEMAXX | 128              |                  |                  |        | 109              | 102    | 115              |        |
|                      | MFEMABR | 170              | 165              | 183              | 181    | 170              | 183    | 201.5            |        |
| <b>k</b>             |         |                  |                  |                  |        |                  |        |                  |        |
| <b>GST04</b>         |         | 331              | 351              | 373              |        |                  |        |                  |        |
| <b>GST05</b>         |         | 352              | 372              | 394              | 454    | 504              |        |                  |        |
| <b>GST06</b>         |         | 375              | 395              | 417              | 477    | 527              | 572    |                  |        |
| <b>GST07</b>         |         |                  |                  | 446              | 506    | 556              | 601    | 649              |        |
| <b>GST09</b>         |         |                  |                  |                  | 549    | 599              | 644    |                  | 692    |

|              | a  | k <sub>g</sub> | o <sup>1)</sup> | p <sub>1</sub> | p <sub>3</sub> <sup>1)</sup> |
|--------------|----|----------------|-----------------|----------------|------------------------------|
| <b>GST04</b> | 36 | 35             | 100             | 41             | 88                           |
| <b>GST05</b> | 45 | 43             | 115             | 51             | 105                          |
| <b>GST06</b> | 56 | 48             | 145             | 63             | 131                          |
| <b>GST07</b> | 70 | 60             | 180             | 82             | 164                          |
| <b>GST09</b> | 89 | 74             | 222             | 101            | 204                          |

|              | d  | d <sub>2</sub> | l  | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i <sub>2</sub> | o <sub>1</sub> | a <sub>2</sub> | b <sub>2</sub> | c <sub>2</sub> | e <sub>2</sub> | f <sub>2</sub> | s <sub>2</sub> |
|--------------|----|----------------|----|----------------|----------------|----|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | k6 |                |    |                |                |    |      |                |                |                | j7             |                |                |                |                |
| <b>GST04</b> | 16 | M5             | 32 | 6              | 20             | 5  | 18   | 32             | 134            | 120            | 80             | 10             | 100            | 3              | 7              |
|              |    |                |    |                |                |    |      |                |                | 140            | 95             | 10             | 115            | 3              | 9              |
|              |    |                |    |                |                |    |      |                |                | 160            | 110            | 10             | 130            | 3.5            | 9              |
| <b>GST05</b> | 20 | M6             | 40 | 6              | 28             | 6  | 22.5 | 40             | 165            | 120            | 80             | 10             | 100            | 3              | 7              |
|              |    |                |    |                |                |    |      |                |                | 140            | 95             | 10             | 115            | 3              | 9              |
|              |    |                |    |                |                |    |      |                |                | 160            | 110            | 10             | 130            | 3.5            | 9              |
|              |    |                |    |                |                |    |      |                |                | 200            | 130            | 12             | 165            | 3.5            | 11             |
| <b>GST06</b> | 25 | M10            | 50 | 4              | 40             | 8  | 28   | 50             | 191            | 160            | 110            | 12             | 130            | 3.5            | 9              |
|              |    |                |    |                |                |    |      |                |                | 200            | 130            | 12             | 165            | 3.5            | 11             |
| <b>GST07</b> | 30 | M10            | 60 | 7.5            | 45             | 8  | 33   | 60             | 223            | 200            | 130            | 14             | 165            | 3.5            | 11             |
|              |    |                |    |                |                |    |      |                |                | 250            | 180            | 15             | 215            | 4              | 13.5           |
| <b>GST09</b> | 40 | M16            | 80 | 8.5            | 63             | 12 | 43   | 80             | 271            | 250            | 180            | 16             | 215            | 4              | 13.5           |
|              |    |                |    |                |                |    |      |                |                | 300            | 230            | 18             | 265            | 4              | 13.5           |

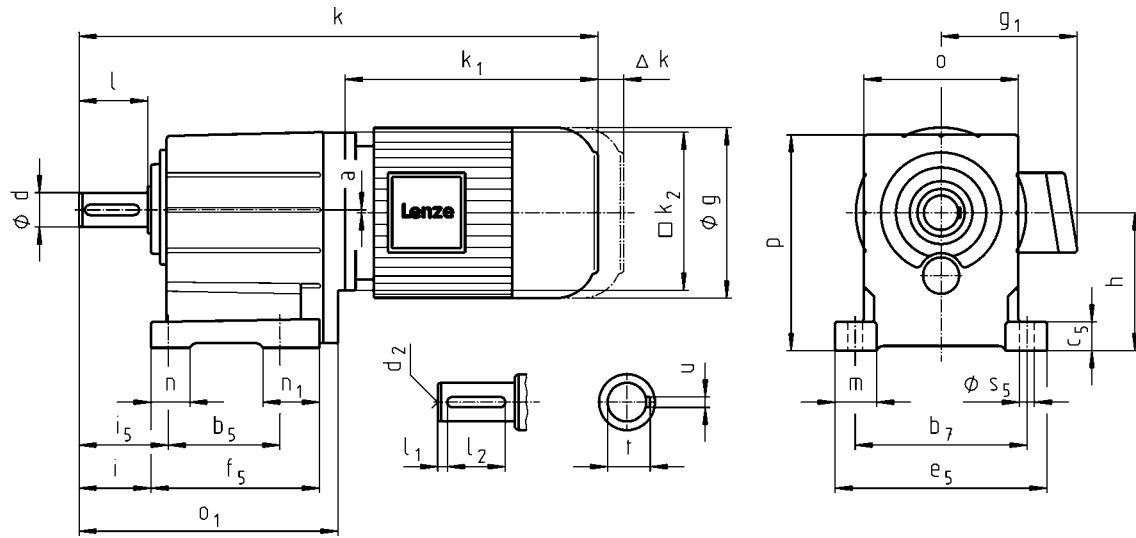
<sup>1)</sup> k<sub>2</sub> !



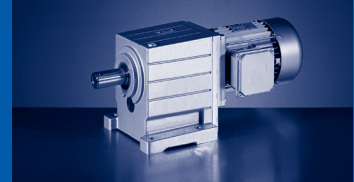
# GST

GST [mm] - MF□MA

## GST□□-2M VBR



|                      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|----------------------|------------------|------------------|------------------|--------|
| <b>g</b>             | 123              | 139              | 156              | 176    |
| <b>g<sub>1</sub></b> | MFEMAXX          | 100              | 109              | 141    |
|                      | MFEMABR          | 107              | 118              | 132    |
| <b>k<sub>1</sub></b> | MFEMAXX          | 187              | 207              | 224.5  |
| <b>k<sub>2</sub></b> |                  | 120              | 145              | 180    |
| <b>Δ k</b>           | MFEMABR          | 40               | 52               | 73     |
|                      | MFFMAXX          |                  | 128              | 68     |
|                      | MFFMABR          | 170              | 165              | 183    |
|                      |                  |                  | <b>k</b>         |        |
| <b>GST03</b>         | 329              |                  |                  |        |
| <b>GST04</b>         | 371              | 391              | 413              |        |
| <b>GST05</b>         | 401              | 421              | 443              | 503    |
| <b>GST06</b>         | 427              | 447              | 469              | 529    |
| <b>GST07</b>         |                  |                  | 525              | 585    |
| <b>GST09</b>         |                  |                  |                  | 648    |

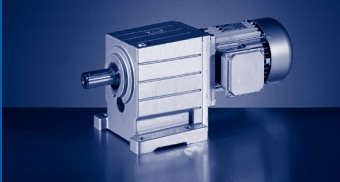


|                      |         | 100C12   | 100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|----------------------|---------|----------|--------|--------|------------------|--------|
| <b>g</b>             |         | 194      |        | 218    |                  | 258    |
| <b>B1</b>            | MFEMAXX | 157      |        | 167    |                  | 195    |
|                      | MFEMABR | 147      |        | 158    |                  | 187    |
| <b>k<sub>1</sub></b> | MFEMAXX | 324      |        | 363    |                  | 403    |
| <b>k<sub>2</sub></b> |         | 180      |        | 222    |                  | 265    |
| <b>Δ k</b>           | MFEMABR | 76       |        | 90     |                  | 109.5  |
|                      | MFFMAXX | 109      |        | 102    |                  | 115    |
|                      | MFFMABR | 170      |        | 183    |                  | 201.5  |
|                      |         | <b>k</b> |        |        |                  |        |
| <b>GST05</b>         |         | 553      |        |        |                  |        |
| <b>GST06</b>         |         | 579      |        | 624    |                  |        |
| <b>GST07</b>         |         | 635      |        | 680    | 728              |        |
| <b>GST09</b>         |         | 698      |        | 743    |                  | 791    |
| <b>GST11</b>         |         | 755      |        | 800    |                  | 848    |
| <b>GST14</b>         |         |          |        | 890    |                  | 938    |

|              | a | h <sup>1)</sup> | o <sup>1)</sup> | p <sup>1)</sup> |
|--------------|---|-----------------|-----------------|-----------------|
| <b>GST03</b> | 2 | 65              | 90              | 101             |
| <b>GST04</b> | 0 | 80              | 100             | 132             |
| <b>GST05</b> | 1 | 100             | 115             | 158.5           |
| <b>GST06</b> | 2 | 125             | 145             | 198             |
| <b>GST07</b> | 3 | 160             | 180             | 251             |
| <b>GST09</b> | 4 | 200             | 222             | 311             |
| <b>GST11</b> | 4 | 250             | 270             | 385             |
| <b>GST14</b> | 6 | 315             | 328             | 479             |

|              | d        | d  | d <sub>2</sub> | l        | l <sub>1</sub> | l <sub>2</sub> | u      | t          | i        | i <sub>5</sub> | o <sub>1</sub> | b <sub>5</sub> | b <sub>7</sub> | c <sub>5</sub> | e <sub>5</sub> | f <sub>5</sub> | m    | n  | n <sub>1</sub> | s <sub>5</sub> |
|--------------|----------|----|----------------|----------|----------------|----------------|--------|------------|----------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------|----|----------------|----------------|
|              | k6       | m6 |                |          |                |                |        |            |          |                |                |                |                |                |                |                |      |    |                |                |
| <b>GST03</b> | 14<br>20 |    | M5<br>M6       | 28<br>40 | 4<br>5         | 20<br>28       | 5<br>6 | 16<br>22.5 | 34<br>46 | 40<br>52       | 127<br>139     | 60             | 91             | 11             | 105            | 84             | 20   |    |                | 6.6            |
| <b>GST04</b> | 20       |    | M6             | 40       | 5              | 28             | 6      | 22.5       | 43       | 53             | 174            | 76             | 105            | 18             | 129            | 112            | 24.5 | 20 | 36             | 9              |
| <b>GST05</b> | 25       |    | M10            | 50       | 4              | 40             | 8      | 28         | 53       | 66             | 214            | 90             | 125            | 23             | 155            | 139            | 32.5 | 26 | 49             | 11             |
| <b>GST06</b> | 30       |    | M10            | 60       | 6              | 45             | 8      | 33         | 64       | 79             | 243            | 106            | 160            | 28             | 196            | 157            | 38   | 35 | 52             | 13.5           |
| <b>GST07</b> | 40       |    | M16            | 80       | 7              | 63             | 12     | 43         | 84       | 104            | 302            | 130            | 200            | 34             | 247            | 196            | 48.5 | 45 | 66             | 18             |
| <b>GST09</b> | 50       |    | M16            | 100      | 8              | 80             | 14     | 53.5       | 105      | 127.5          | 370            | 165            | 245            | 44             | 298            | 239            | 54   | 48 | 74             | 18             |
| <b>GST11</b> |          | 60 | M20            | 120      | 8              | 100            | 18     | 64         | 125      | 155            | 433            | 200            | 300            | 54             | 368            | 280            | 69   | 65 | 80             | 22             |
| <b>GST14</b> |          | 80 | M20            | 160      | 15             | 125            | 22     | 85         | 165      | 200            | 533            | 250            | 380            | 65             | 460            | 340            | 85   | 85 | 91             | 26             |

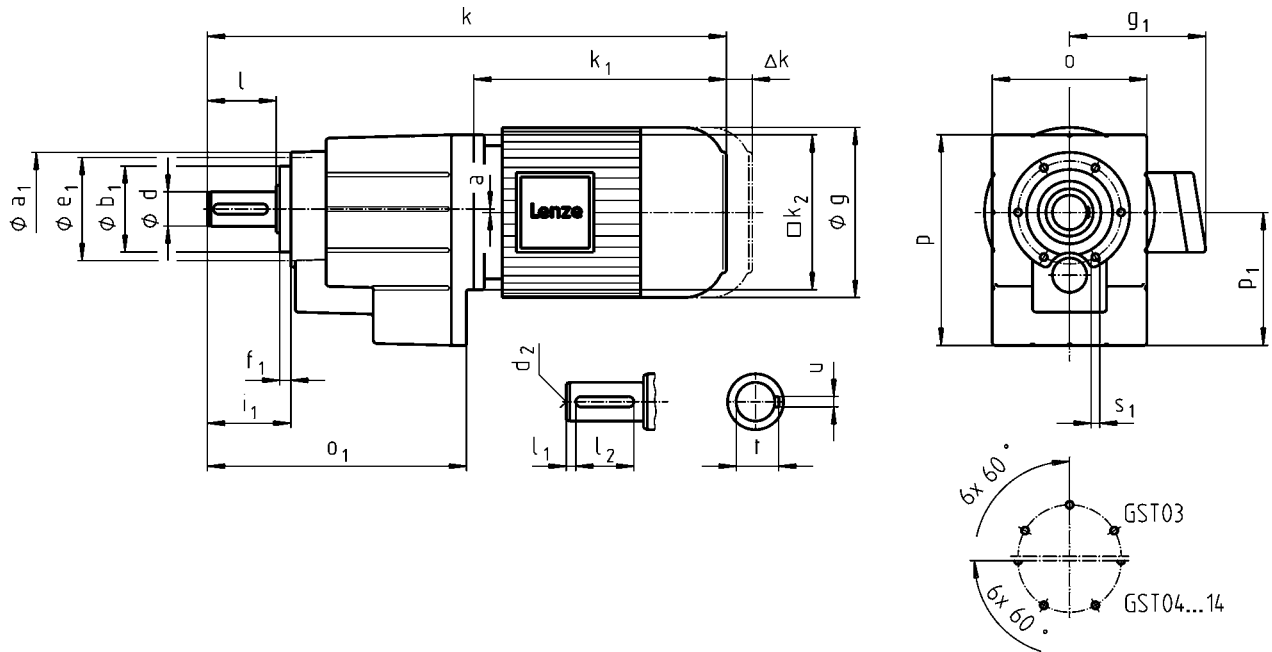
<sup>1)</sup> k<sub>2</sub> !



# GST

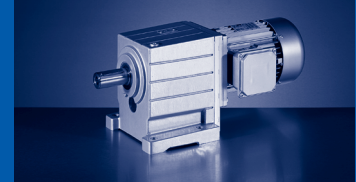
GST [mm] - MF□MA

## GST□□-2M VCR



|                |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|----------------|---------|------------------|------------------|------------------|--------|
| g              |         | 123              | 139              | 156              | 176    |
| g <sub>1</sub> | MFEMAXX | 100              | 109              | 141              | 146    |
|                | MFEMABR | 107              | 118              | 132              | 137    |
| k <sub>1</sub> | MFEMAXX | 187              | 207              | 224.5            | 274    |
| k <sub>2</sub> |         | 120              |                  | 145              | 180    |
| Δ k            | MFEMABR | 40               | 52               | 73               | 68     |
|                | MFFMAXX |                  |                  | 128              |        |
|                | MFFMABR | 170              | 165              | 183              | 181    |
| <b>k</b>       |         |                  |                  |                  |        |
| GST03          |         | 329              |                  |                  |        |
| GST04          |         | 371              | 391              | 413              |        |
| GST05          |         | 401              | 421              | 443              | 503    |
| GST06          |         | 427              | 447              | 469              | 529    |
| GST07          |         |                  |                  | 525              | 585    |
| GST09          |         |                  |                  |                  | 648    |



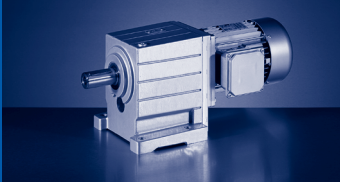


|                      |         | 100C12   | 100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|----------------------|---------|----------|--------|--------|------------------|--------|
| <b>g</b>             |         | 194      |        | 218    |                  | 258    |
| <b>B1</b>            | MFEMAXX | 157      |        | 167    |                  | 195    |
|                      | MFEMABR | 147      |        | 158    |                  | 187    |
| <b>k<sub>1</sub></b> | MFEMAXX | 324      |        | 363    |                  | 403    |
| <b>k<sub>2</sub></b> |         | 180      |        | 222    |                  | 265    |
| <b>Δ k</b>           | MFEMABR | 76       |        | 90     |                  | 109.5  |
|                      | MFFMAXX | 109      |        | 102    |                  | 115    |
|                      | MFFMABR | 170      |        | 183    |                  | 201.5  |
|                      |         | <b>k</b> |        |        |                  |        |
| <b>GST05</b>         |         | 553      |        |        |                  |        |
| <b>GST06</b>         |         | 579      |        | 624    |                  |        |
| <b>GST07</b>         |         | 635      |        | 680    | 728              |        |
| <b>GST09</b>         |         | 698      |        | 743    |                  | 791    |
| <b>GST11</b>         |         | 755      |        | 800    |                  | 848    |
| <b>GST14</b>         |         |          |        | 890    |                  | 938    |

|              | a | o <sup>1)</sup> | p <sup>1)</sup> | P <sub>1</sub> |
|--------------|---|-----------------|-----------------|----------------|
| <b>GST03</b> | 2 | 90              | 100             | 64             |
| <b>GST04</b> | 0 | 100             | 129             | 77             |
| <b>GST05</b> | 1 | 115             | 156             | 98             |
| <b>GST06</b> | 2 | 145             | 194             | 121            |
| <b>GST07</b> | 3 | 180             | 245             | 155            |
| <b>GST09</b> | 4 | 222             | 304             | 194            |
| <b>GST11</b> | 4 | 270             | 378             | 243            |
| <b>GST14</b> | 6 | 328             | 470             | 306            |

|              | d        | d  | d <sub>2</sub> | l        | l <sub>1</sub> | l <sub>2</sub> | u      | t          | i <sub>1</sub> | o <sub>1</sub> | a <sub>1</sub> | b <sub>1</sub> | e <sub>1</sub> | f <sub>1</sub> | s <sub>1</sub> |
|--------------|----------|----|----------------|----------|----------------|----------------|--------|------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | k6       | m6 |                |          |                |                |        |            |                |                |                | h7             |                |                |                |
| <b>GST03</b> | 14<br>20 |    | M5<br>M6       | 28<br>40 | 4<br>5         | 20<br>28       | 5<br>6 | 16<br>22.5 | 39<br>51       | 127<br>139     | 71             | 48             | 61             | 8              | M5x10          |
| <b>GST04</b> | 20       |    | M6             | 40       | 5              | 28             | 6      | 22.5       | 51             | 174            | 72             | 48             | 61             | 8              | M5x10          |
| <b>GST05</b> | 25       |    | M10            | 50       | 4              | 40             | 8      | 28         | 62             | 214            | 88             | 58             | 74             | 9              | M6x12          |
| <b>GST06</b> | 30       |    | M10            | 60       | 6              | 45             | 8      | 33         | 74             | 243            | 109            | 70             | 90             | 10             | M8x14          |
| <b>GST07</b> | 40       |    | M16            | 80       | 7              | 63             | 12     | 43         | 97             | 302            | 140            | 100            | 120            | 13             | M10x18         |
| <b>GST09</b> | 50       |    | M16            | 100      | 8              | 80             | 14     | 53.5       | 120            | 370            | 174            | 120            | 145            | 15             | M12x20         |
| <b>GST11</b> |          | 60 | M20            | 120      | 8              | 100            | 18     | 64         | 143            | 433            | 215            | 150            | 185            | 18             | M16x26         |
| <b>GST14</b> |          | 80 | M20            | 160      | 15             | 125            | 22     | 85         | 187            | 533            | 265            | 195            | 230            | 22             | M20x34         |

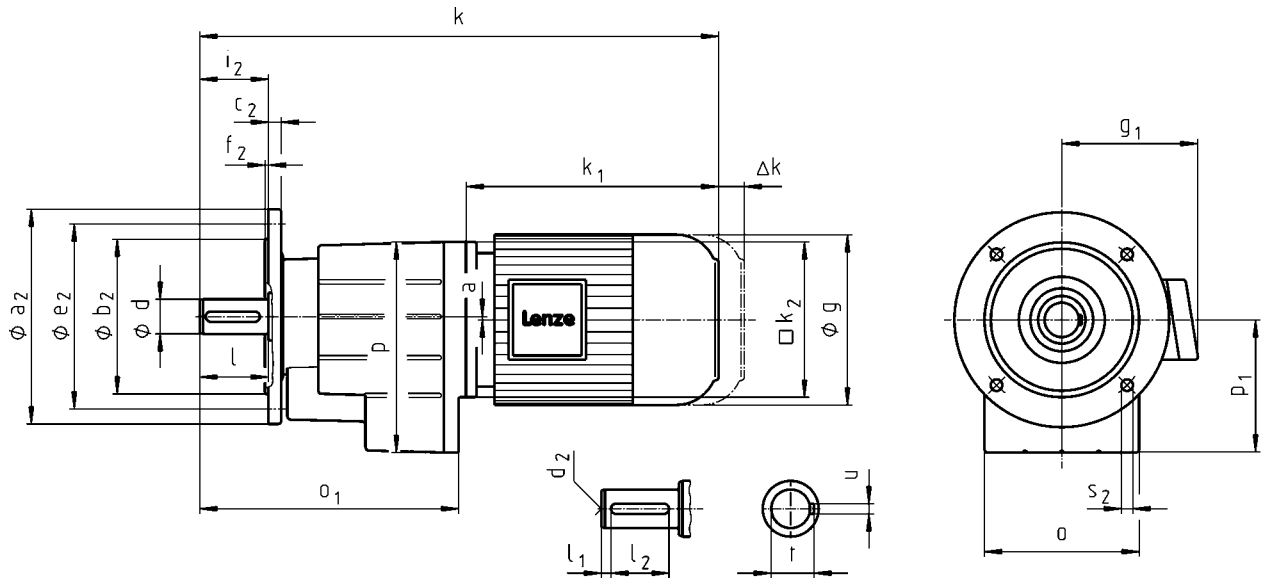
<sup>1)</sup> k<sub>2</sub> !



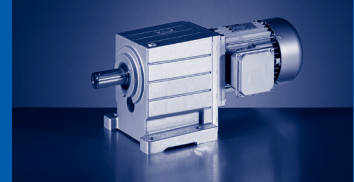
# GST

GST [mm] - MF□MA

## GST□□-2M VCK



|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|----------------------|---------|------------------|------------------|------------------|--------|
| <b>g</b>             |         | 123              | 139              | 156              | 176    |
| <b>g<sub>1</sub></b> | MFEMAXX | 100              | 109              | 141              | 146    |
|                      | MFEMABR | 107              | 118              | 132              | 137    |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              | 224.5            | 274    |
| <b>k<sub>2</sub></b> |         | 120              |                  | 145              | 180    |
| <b>Δ k</b>           | MFEMABR | 40               | 52               | 73               | 68     |
|                      | MFFMAXX |                  | 128              |                  |        |
|                      | MFFMABR | 170              | 165              | 183              | 181    |
|                      |         | <b>k</b>         |                  |                  |        |
| <b>GST03</b>         |         | 329              |                  |                  |        |
| <b>GST04</b>         |         | 371              | 391              | 413              |        |
| <b>GST05</b>         |         | 401              | 421              | 443              | 503    |
| <b>GST06</b>         |         | 427              | 447              | 469              | 529    |
| <b>GST07</b>         |         |                  |                  | 525              | 585    |
| <b>GST09</b>         |         |                  |                  |                  | 648    |

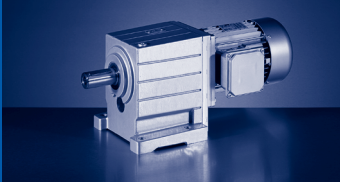


|                      |         | 100C12 | 100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|----------------------|---------|--------|--------|--------|------------------|--------|
| <b>g</b>             |         | 194    |        | 218    |                  | 258    |
| <b>B1</b>            | MFEMAXX | 157    |        | 167    |                  | 195    |
|                      | MFEMABR | 147    |        | 158    |                  | 187    |
| <b>k<sub>1</sub></b> | MFEMAXX | 324    |        | 363    |                  | 403    |
| <b>k<sub>2</sub></b> |         | 180    |        | 222    |                  | 265    |
| <b>Δ k</b>           | MFEMABR | 76     |        | 90     |                  | 109.5  |
|                      | MFFMAXX | 109    |        | 102    |                  | 115    |
|                      | MFFMABR | 170    |        | 183    |                  | 201.5  |
| <b>k</b>             |         |        |        |        |                  |        |
| <b>GST05</b>         |         | 553    |        |        |                  |        |
| <b>GST06</b>         |         | 579    |        | 624    |                  |        |
| <b>GST07</b>         |         | 635    |        | 680    | 728              |        |
| <b>GST09</b>         |         | 698    |        | 743    |                  | 791    |
| <b>GST11</b>         |         | 755    |        | 800    |                  | 848    |
| <b>GST14</b>         |         |        |        | 890    |                  | 938    |

|              | a | o <sup>1)</sup> | p <sup>1)</sup> | P <sub>1</sub> |
|--------------|---|-----------------|-----------------|----------------|
| <b>GST03</b> | 2 | 90              | 100             | 64             |
| <b>GST04</b> | 0 | 100             | 129             | 77             |
| <b>GST05</b> | 1 | 115             | 156             | 98             |
| <b>GST06</b> | 2 | 145             | 194             | 121            |
| <b>GST07</b> | 3 | 180             | 245             | 155            |
| <b>GST09</b> | 4 | 222             | 304             | 194            |
| <b>GST11</b> | 4 | 270             | 378             | 243            |
| <b>GST14</b> | 6 | 328             | 470             | 306            |

|              | d  | d  | d <sub>2</sub> | l   | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i <sub>2</sub> | o <sub>1</sub> | a <sub>2</sub> | b <sub>2</sub> | c <sub>2</sub> | e <sub>2</sub> | f <sub>2</sub> | s <sub>2</sub> |
|--------------|----|----|----------------|-----|----------------|----------------|----|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | k6 | m6 |                |     |                |                |    |      |                |                |                | j7             |                |                |                |                |
| <b>GST03</b> | 14 |    | M5             | 28  | 4              | 20             | 5  | 16   | 28             | 127            | 120            | 80             | 10             | 100            | 3              | 7              |
|              | 20 |    | M6             | 40  | 5              | 28             | 6  | 22.5 | 40             | 139            | 140            | 95             | 10             | 115            | 3              | 9              |
|              |    |    |                |     |                |                |    |      |                |                | 160            | 110            | 10             | 130            | 3.5            | 9              |
| <b>GST04</b> | 20 |    | M6             | 40  | 5              | 28             | 6  | 22.5 | 40             | 174            | 120            | 80             | 10             | 100            | 3              | 7              |
|              |    |    |                |     |                |                |    |      |                |                | 140            | 95             | 10             | 115            | 3              | 9              |
|              |    |    |                |     |                |                |    |      |                |                | 160            | 110            | 10             | 130            | 3.5            | 9              |
| <b>GST05</b> | 25 |    | M10            | 50  | 4              | 40             | 8  | 28   | 50             | 214            | 120            | 80             | 10             | 100            | 3              | 7              |
|              |    |    |                |     |                |                |    |      |                |                | 140            | 95             | 10             | 115            | 3              | 9              |
|              |    |    |                |     |                |                |    |      |                |                | 160            | 110            | 10             | 130            | 3.5            | 9              |
|              |    |    |                |     |                |                |    |      |                |                | 200            | 130            | 12             | 165            | 3.5            | 11             |
| <b>GST06</b> | 30 |    | M10            | 60  | 6              | 45             | 8  | 33   | 60             | 243            | 160            | 110            | 12             | 130            | 3.5            | 9              |
|              |    |    |                |     |                |                |    |      |                |                | 200            | 130            | 12             | 165            | 3.5            | 11             |
| <b>GST07</b> | 40 |    | M16            | 80  | 7              | 63             | 12 | 43   | 80             | 302            | 200            | 130            | 14             | 165            | 3.5            | 11             |
|              |    |    |                |     |                |                |    |      |                |                | 250            | 180            | 15             | 215            | 4              | 13.5           |
| <b>GST09</b> | 50 |    | M16            | 100 | 8              | 80             | 14 | 53.5 | 100            | 370            | 250            | 180            | 16             | 215            | 4              | 13.5           |
|              |    |    |                |     |                |                |    |      |                |                | 300            | 230            | 18             | 265            | 4              | 13.5           |
| <b>GST11</b> |    | 60 | M20            | 120 | 8              | 100            | 18 | 64   | 120            | 433            | 300            | 230            | 18             | 265            | 4              | 14             |
|              |    |    |                |     |                |                |    |      |                |                | 350            | 250            | 20             | 300            | 5              | 18             |
| <b>GST14</b> |    | 80 | M20            | 160 | 15             | 125            | 22 | 85   | 160            | 533            | 350            | 250            | 22             | 300            | 5              | 18             |
|              |    |    |                |     |                |                |    |      |                |                | 400            | 300            | 24             | 350            | 5              | 18             |

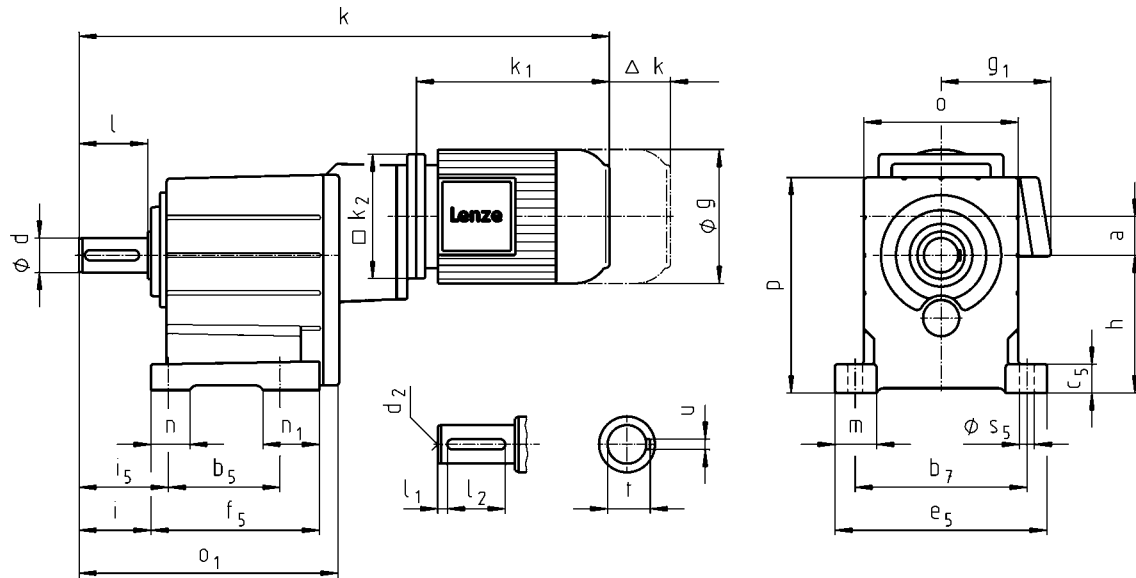
<sup>1)</sup> k<sub>2</sub> !



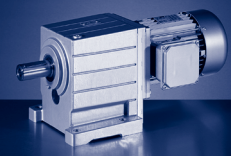
# GST

GST [mm] - MF□MA

## GST□□-3M VBR



|                      | 063C32<br>063C42 | 071C32 | 071C42   | 080C32<br>080C42 |
|----------------------|------------------|--------|----------|------------------|
| <b>g</b>             | 123              |        | 139      | 156              |
| <b>g<sub>1</sub></b> | MFEMAXX          |        | 109      | 141              |
|                      | MFEMABR          |        | 118      | 132              |
| <b>k<sub>1</sub></b> | 187              |        | 207      | 224.5            |
| <b>k<sub>2</sub></b> |                  | 120    |          | 145              |
| <b>Δ k</b>           | MFEMABR          |        | 52       | 73               |
|                      | MFFMAXX          |        | 128      |                  |
|                      | MFFMABR          | 170    |          | 165              |
|                      |                  |        | <b>k</b> |                  |
| <b>GST05</b>         | 477              | 497    |          |                  |
| <b>GST06</b>         | 520              |        | 540      | 563              |
| <b>GST07</b>         | 587              |        | 607      | 630              |
| <b>GST09</b>         | 668              |        | 688      | 711              |
| <b>GST11</b>         |                  |        |          | 787              |

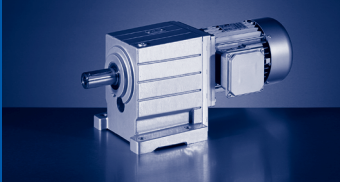


|                      |         | 090C32 | 100C12 | 100C32 | 112C22 | 132C12<br>132C22<br>132C32 |
|----------------------|---------|--------|--------|--------|--------|----------------------------|
| <b>g</b>             |         | 176    |        | 194    | 218    | 258                        |
| <b>β<sub>1</sub></b> | MFEMAXX | 146    |        | 157    | 167    | 195                        |
|                      | MFEMABR | 137    |        | 147    | 158    | 187                        |
| <b>k<sub>1</sub></b> | MFEMAXX | 274    |        | 324    | 363    | 403                        |
| <b>k<sub>2</sub></b> |         |        | 180    |        | 222    | 265                        |
|                      | MFEMABR | 68     |        | 76     | 90     | 109.5                      |
| <b>Δ k</b>           | MFEMAXX | 128    |        | 109    | 102    | 115                        |
|                      | MFEMABR | 181    |        | 170    | 183    | 201.5                      |
| <b>k</b>             |         |        |        |        |        |                            |
| <b>GST07</b>         |         | 689    | 739    |        |        |                            |
| <b>GST09</b>         |         | 770    |        | 820    | 865    |                            |
| <b>GST11</b>         |         | 846    |        | 896    | 941    | 989                        |
| <b>GST14</b>         |         | 970    |        | 1020   | 1065   | 1113                       |

|              | a  | h   | o <sup>1)</sup> | p <sup>1)</sup> |
|--------------|----|-----|-----------------|-----------------|
| <b>GST05</b> | 35 | 100 | 115             | 158.5           |
| <b>GST06</b> | 34 | 125 | 145             | 198             |
| <b>GST07</b> | 42 | 160 | 180             | 251             |
| <b>GST09</b> | 52 | 200 | 222             | 311             |
| <b>GST11</b> | 66 | 250 | 270             | 385             |
| <b>GST14</b> | 83 | 315 | 328             | 479             |

|              | d  | d  | d <sub>2</sub> | l   | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i   | i <sub>5</sub> | o <sub>1</sub> | b <sub>5</sub> | b <sub>7</sub> | c <sub>5</sub> | e <sub>5</sub> | f <sub>5</sub> | m    | n  | n <sub>1</sub> | s <sub>5</sub> |
|--------------|----|----|----------------|-----|----------------|----------------|----|------|-----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------|----|----------------|----------------|
|              | k6 | m6 |                |     |                |                |    |      |     |                |                |                |                |                |                |                |      |    |                |                |
| <b>GST05</b> | 25 |    | M10            | 50  | 4              | 40             | 8  | 28   | 53  | 66             | 208            | 90             | 125            | 23             | 155            | 139            | 32.5 | 26 | 49             | 11             |
| <b>GST06</b> | 30 |    | M10            | 60  | 6              | 45             | 8  | 33   | 64  | 79             | 240            | 106            | 160            | 28             | 196            | 157            | 38   | 35 | 52             | 13.5           |
| <b>GST07</b> | 40 |    | M16            | 80  | 7              | 63             | 12 | 43   | 84  | 104            | 302            | 130            | 200            | 34             | 247            | 196            | 48.5 | 45 | 66             | 18             |
| <b>GST09</b> | 50 |    | M16            | 100 | 8              | 80             | 14 | 53.5 | 105 | 127.5          | 370            | 165            | 245            | 44             | 298            | 239            | 54   | 48 | 74             | 18             |
| <b>GST11</b> |    | 60 | M20            | 120 | 8              | 100            | 18 | 64   | 125 | 155            | 433            | 200            | 300            | 54             | 368            | 280            | 69   | 65 | 80             | 22             |
| <b>GST14</b> |    | 80 | M20            | 160 | 15             | 125            | 22 | 85   | 165 | 200            | 533            | 250            | 380            | 65             | 460            | 340            | 85   | 85 | 91             | 26             |

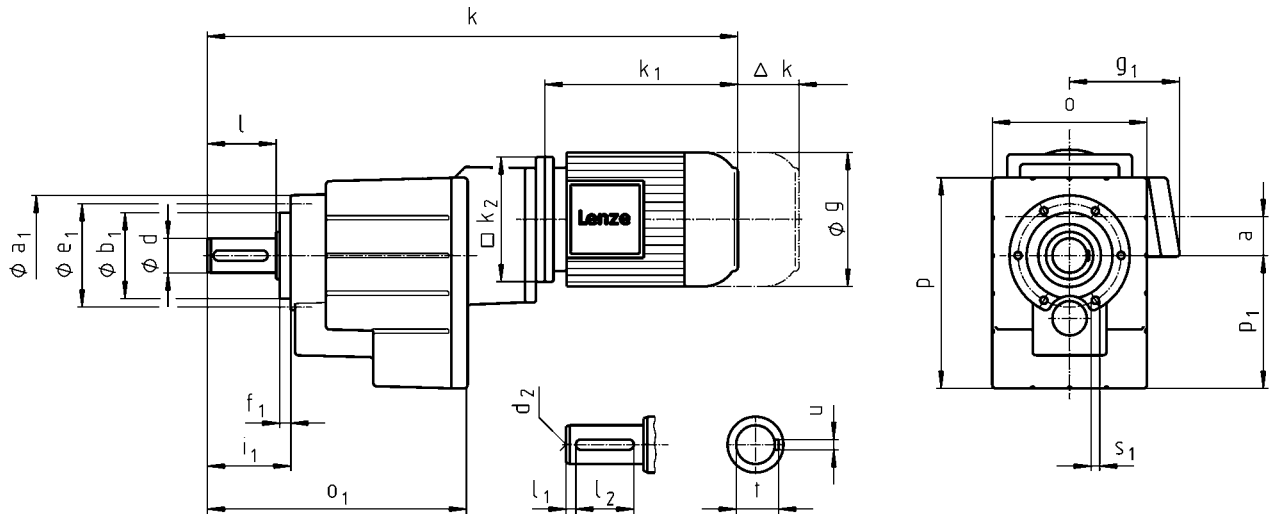
<sup>1)</sup> k<sub>2</sub> !



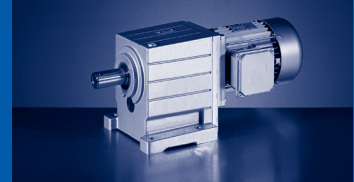
# GST

GST [mm] - MF□MA

## GST□□-3M VCR



|                      | 063C32<br>063C42 | 071C32 | 071C42   | 080C32<br>080C42 |
|----------------------|------------------|--------|----------|------------------|
| <b>g</b>             | 123              |        | 139      | 156              |
| <b>β<sub>1</sub></b> | MFEMAXX          |        | 109      | 141              |
|                      | MFEMABR          |        | 118      | 132              |
| <b>k<sub>1</sub></b> | 187              |        | 207      | 224.5            |
| <b>k<sub>2</sub></b> |                  | 120    |          | 145              |
| <b>Δ k</b>           | MFEMABR          |        | 52       | 73               |
|                      | MFFMAXX          |        | 128      |                  |
|                      | 170              |        | 165      | 183              |
|                      |                  |        | <b>k</b> |                  |
| <b>GST05</b>         | 477              | 497    |          |                  |
| <b>GST06</b>         | 520              |        | 540      | 563              |
| <b>GST07</b>         | 587              |        | 607      | 630              |
| <b>GST09</b>         | 668              |        | 688      | 711              |
| <b>GST11</b>         |                  |        |          | 787              |

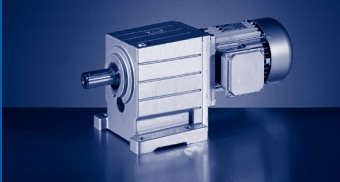


|                      | 090C32  | 100C12 | 100C32 | 112C22 | 132C12<br>132C22<br>132C32 |
|----------------------|---------|--------|--------|--------|----------------------------|
| <b>g</b>             | 176     |        | 194    | 218    | 258                        |
| <b>β<sub>1</sub></b> | MFEMAXX |        | 157    | 167    | 195                        |
|                      | MFEMABR |        | 147    | 158    | 187                        |
| <b>k<sub>1</sub></b> | MFEMAXX |        | 324    | 363    | 403                        |
| <b>k<sub>2</sub></b> |         | 180    |        | 222    | 265                        |
|                      | MFEMABR |        | 76     | 90     | 109.5                      |
| <b>Δ k</b>           | MFEMAXX |        | 109    | 102    | 115                        |
|                      | MFEMABR |        | 170    | 183    | 201.5                      |
| <b>k</b>             |         |        |        |        |                            |
| <b>GST07</b>         | 689     | 739    |        |        |                            |
| <b>GST09</b>         | 770     |        | 820    | 865    |                            |
| <b>GST11</b>         | 846     |        | 896    | 941    | 989                        |
| <b>GST14</b>         | 970     |        | 1020   | 1065   | 1113                       |

|              | a  | o <sup>1)</sup> | p <sup>1)</sup> | P <sub>1</sub> |
|--------------|----|-----------------|-----------------|----------------|
| <b>GST05</b> | 35 | 115             | 156             | 98             |
| <b>GST06</b> | 34 | 145             | 194             | 121            |
| <b>GST07</b> | 42 | 180             | 245             | 155            |
| <b>GST09</b> | 52 | 222             | 304             | 194            |
| <b>GST11</b> | 66 | 270             | 378             | 243            |
| <b>GST14</b> | 83 | 328             | 470             | 306            |

|              | d  | d  | d <sub>2</sub> | l   | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i <sub>1</sub> | o <sub>1</sub> | a <sub>1</sub> | b <sub>1</sub> | e <sub>1</sub> | f <sub>1</sub> | s <sub>1</sub> |
|--------------|----|----|----------------|-----|----------------|----------------|----|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | k6 | m6 |                |     |                |                |    |      |                |                |                | h7             |                |                |                |
| <b>GST05</b> | 25 |    | M10            | 50  | 4              | 40             | 8  | 28   | 62             | 208            | 88             | 58             | 74             | 9              | M6x12          |
| <b>GST06</b> | 30 |    | M10            | 60  | 6              | 45             | 8  | 33   | 74             | 240            | 109            | 70             | 90             | 10             | M8x14          |
| <b>GST07</b> | 40 |    | M16            | 80  | 7              | 63             | 12 | 43   | 97             | 302            | 140            | 100            | 120            | 13             | M10x18         |
| <b>GST09</b> | 50 |    | M16            | 100 | 8              | 80             | 14 | 53.5 | 120            | 370            | 174            | 120            | 145            | 15             | M12x20         |
| <b>GST11</b> |    | 60 | M20            | 120 | 8              | 100            | 18 | 64   | 143            | 433            | 215            | 150            | 185            | 18             | M16x26         |
| <b>GST14</b> |    | 80 | M20            | 160 | 15             | 125            | 22 | 85   | 187            | 533            | 265            | 195            | 230            | 22             | M20x34         |

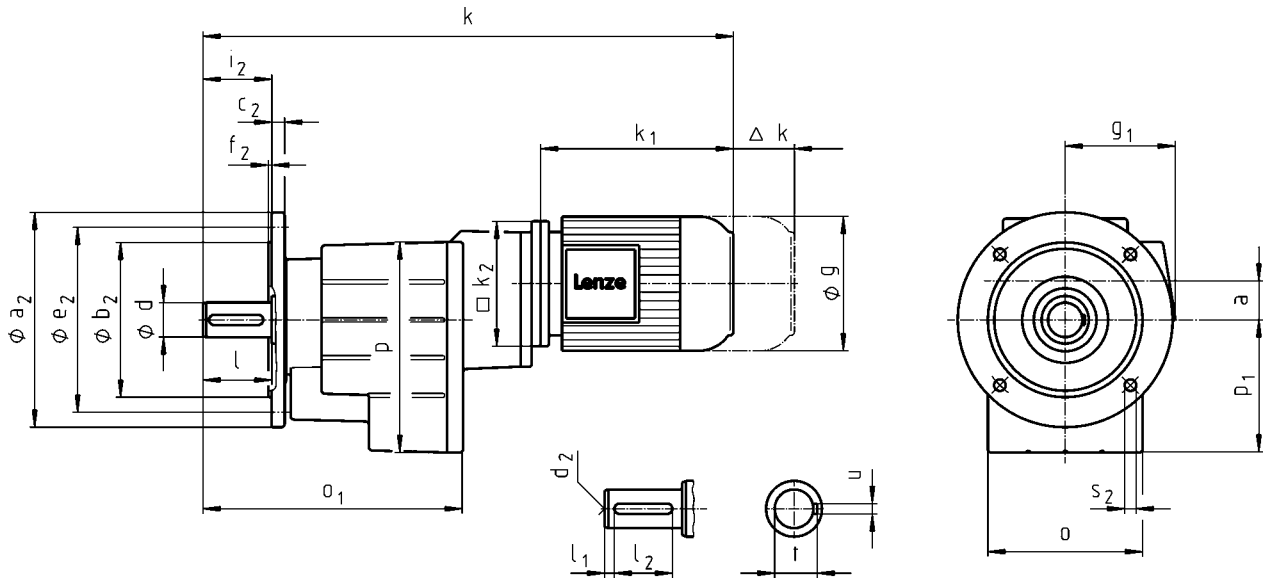
<sup>1)</sup> k<sub>2</sub> !



# GST

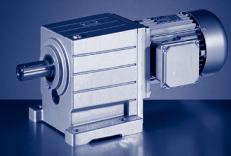
GST [mm] - MF□MA

## GST□□-3M VCK



|                      | 063C32<br>063C42 | 071C32 | 071C42   | 080C32<br>080C42 |
|----------------------|------------------|--------|----------|------------------|
| <b>g</b>             | 123              |        | 139      | 156              |
| <b>g<sub>1</sub></b> | MFEMAXX          |        | 109      | 141              |
|                      | MFEMABR          |        | 118      | 132              |
| <b>k<sub>1</sub></b> | 187              |        | 207      | 224.5            |
| <b>k<sub>2</sub></b> |                  | 120    |          | 145              |
| <b>Δ k</b>           | MFEMABR          |        | 52       | 73               |
|                      | MFFMAXX          |        | 128      |                  |
|                      | MFFMABR          | 170    |          | 165              |
|                      |                  |        | <b>k</b> |                  |
| <b>GST05</b>         | 477              | 497    |          |                  |
| <b>GST06</b>         | 520              |        | 540      | 563              |
| <b>GST07</b>         | 587              |        | 607      | 630              |
| <b>GST09</b>         | 668              |        | 688      | 711              |
| <b>GST11</b>         |                  |        |          | 787              |



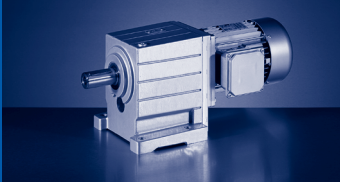


|                      | 090C32  | 100C12 | 100C32 | 112C22 | 132C12<br>132C22<br>132C32 |
|----------------------|---------|--------|--------|--------|----------------------------|
| <b>g</b>             | 176     |        | 194    | 218    | 258                        |
| <b>β<sub>1</sub></b> | MFEMAXX |        | 157    | 167    | 195                        |
|                      | MFEMABR |        | 147    | 158    | 187                        |
| <b>k<sub>1</sub></b> | MFEMAXX |        | 324    | 363    | 403                        |
| <b>k<sub>2</sub></b> |         | 180    |        | 222    | 265                        |
|                      | MFEMABR |        | 76     | 90     | 109.5                      |
| <b>Δ k</b>           | MFEMAXX |        | 109    | 102    | 115                        |
|                      | MFEMABR |        | 170    | 183    | 201.5                      |
| <b>k</b>             |         |        |        |        |                            |
| <b>GST07</b>         | 689     | 739    |        |        |                            |
| <b>GST09</b>         | 770     |        | 820    | 865    |                            |
| <b>GST11</b>         | 846     |        | 896    | 941    | 989                        |
| <b>GST14</b>         | 970     |        | 1020   | 1065   | 1113                       |

|              | a  | o <sup>1)</sup> | p <sup>1)</sup> | P <sub>1</sub> |
|--------------|----|-----------------|-----------------|----------------|
| <b>GST05</b> | 35 | 115             | 156             | 98             |
| <b>GST06</b> | 34 | 145             | 194             | 121            |
| <b>GST07</b> | 42 | 180             | 245             | 155            |
| <b>GST09</b> | 52 | 222             | 304             | 194            |
| <b>GST11</b> | 66 | 270             | 378             | 243            |
| <b>GST14</b> | 83 | 328             | 470             | 306            |

|              | d  | d  | d <sub>2</sub> | l   | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i <sub>2</sub> | o <sub>1</sub> | a <sub>2</sub> | b <sub>2</sub> | c <sub>2</sub> | e <sub>2</sub> | f <sub>2</sub> | s <sub>2</sub> |
|--------------|----|----|----------------|-----|----------------|----------------|----|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | k6 | m6 |                |     |                |                |    |      |                |                |                | j7             |                |                |                |                |
| <b>GST05</b> | 25 |    | M10            | 50  | 4              | 40             | 8  | 28   | 50             | 208            | 120            | 80             | 10             | 100            | 3              | 7              |
|              |    |    |                |     |                |                |    |      |                |                | 140            | 95             | 10             | 115            | 3              | 9              |
|              |    |    |                |     |                |                |    |      |                |                | 160            | 110            | 10             | 130            | 3.5            | 9              |
|              |    |    |                |     |                |                |    |      |                |                | 200            | 130            | 12             | 165            | 3.5            | 11             |
| <b>GST06</b> | 30 |    | M10            | 60  | 6              | 45             | 8  | 33   | 60             | 240            | 160            | 110            | 12             | 130            | 3.5            | 9              |
|              |    |    |                |     |                |                |    |      |                |                | 200            | 130            | 12             | 165            | 3.5            | 11             |
| <b>GST07</b> | 40 |    | M16            | 80  | 7              | 63             | 12 | 43   | 80             | 302            | 200            | 130            | 14             | 165            | 3.5            | 11             |
|              |    |    |                |     |                |                |    |      |                |                | 250            | 180            | 15             | 215            | 4              | 13.5           |
| <b>GST09</b> | 50 |    | M16            | 100 | 8              | 80             | 14 | 53.5 | 100            | 370            | 250            | 180            | 16             | 215            | 4              | 13.5           |
|              |    |    |                |     |                |                |    |      |                |                | 300            | 230            | 18             | 265            | 4              | 13.5           |
| <b>GST11</b> |    | 60 | M20            | 120 | 8              | 100            | 18 | 64   | 120            | 433            | 300            | 230            | 18             | 265            | 4              | 14             |
|              |    |    |                |     |                |                |    |      |                |                | 350            | 250            | 20             | 300            | 5              | 18             |
| <b>GST14</b> |    | 80 | M20            | 160 | 15             | 125            | 22 | 85   | 160            | 533            | 350            | 250            | 22             | 300            | 5              | 18             |
|              |    |    |                |     |                |                |    |      |                |                | 400            | 300            | 24             | 350            | 5              | 18             |

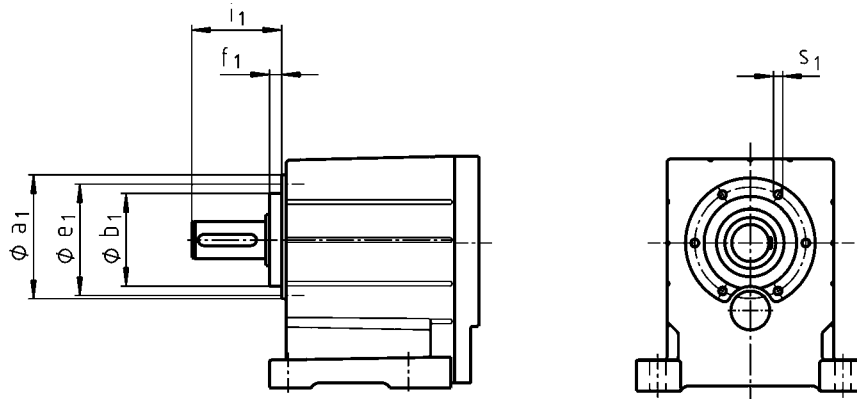
<sup>1)</sup> k<sub>2</sub> !



# GST

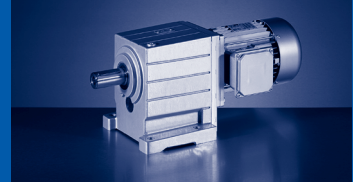
GST & [mm] - Additional dimensions

## GST□□-2/3M VAR

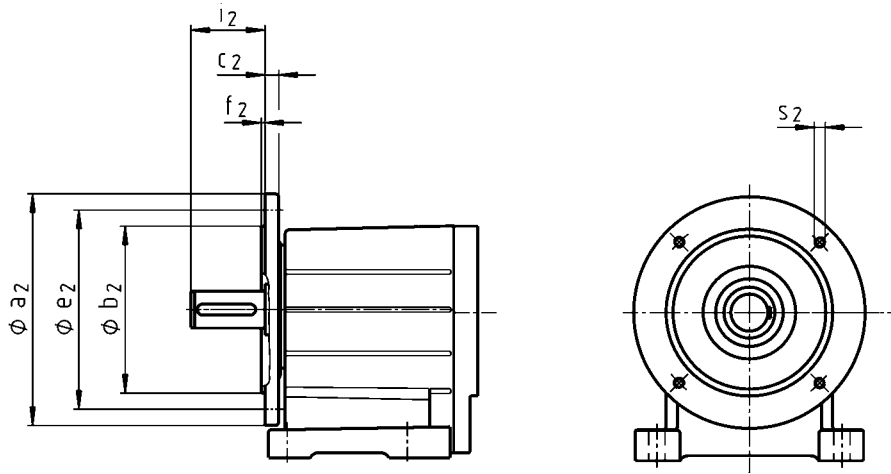


|       | $a_1$ | $b_1$ | $e_1$ | $f_1$ | $i_1$ | $s_1$  |
|-------|-------|-------|-------|-------|-------|--------|
|       |       | h7    |       |       |       |        |
| GST04 | 72    | 48    | 61    | 8.0   | 51.0  | M5x10  |
| GST05 | 88    | 58    | 74    | 9.0   | 62.0  | M6x12  |
| GST06 | 109   | 70    | 90    | 10.0  | 74.0  | M8x14  |
| GST07 | 140   | 100   | 120   | 13.0  | 97.0  | M10x18 |
| GST09 | 174   | 120   | 145   | 15.0  | 120.0 | M12x20 |
| GST11 | 215   | 150   | 185   | 18.0  | 143.0 | M16x26 |
| GST14 | 265   | 195   | 230   | 22.0  | 187.0 | M20x34 |

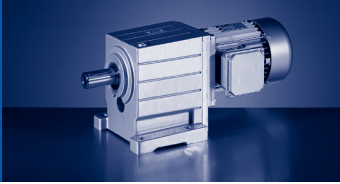
3



GST□□-2/3M VAL

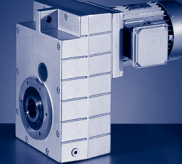


|       | a <sub>2</sub> | b <sub>2</sub> | c <sub>2</sub> | e <sub>2</sub> | f <sub>2</sub> | i <sub>2</sub> | s <sub>2</sub> |
|-------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|       |                | j7             |                |                |                |                |                |
| GST04 | 120            | 80             | 10             | 100            | 3.0            | 40             | M6             |
|       | 140            | 95             |                | 115            |                |                | M8             |
| GST05 | 120            | 80             | 10             | 100            | 3.5            | 50             | M6             |
|       | 140            | 95             |                | 115            |                |                | M8             |
| GST06 | 160            | 110            | 12             | 130            | 4.0            | 60             | M10            |
|       | 200            | 130            |                | 165            |                |                |                |
| GST07 | 250            | 180            | 14             | 215            | 4.0            | 80             | M12            |
| GST09 | 250            | 180            | 15             | 265            |                | 100            |                |
|       | 300            | 230            | 16             |                | 120            |                |                |
| GST11 | 350            | 250            | 18             | 300            | 5.0            | 160            | M16            |
| GST14 | 350            | 250            | 20             | 350            |                |                |                |
|       | 400            | 300            | 22             |                |                |                |                |
|       | 400            | 300            | 24             |                |                |                |                |



## GST

GST [kg] - MF□MA



### Permissible radial and axial forces at output

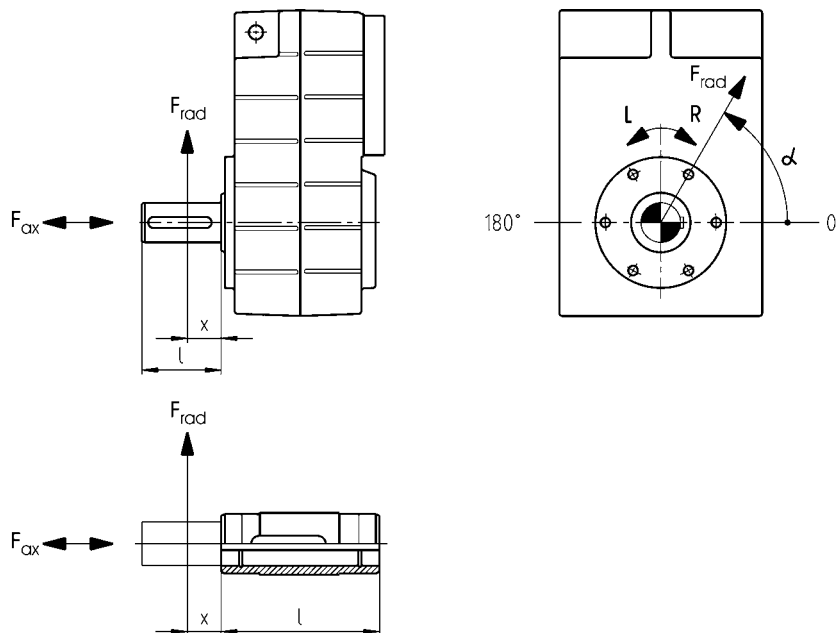
#### Permissible radial force

$$F_{rad,per} = \min(f_w \times f_\alpha \times F_{rad,max} ; f_w \times F_{rad,max} \text{ at } n_2 \leq 16 \text{ r/min})$$

#### Permissible axial force

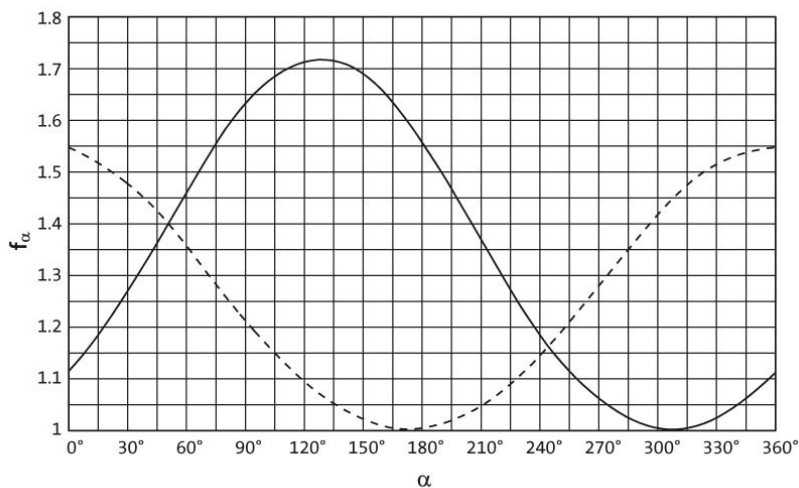
$$F_{ax,per} = F_{ax,max} \text{ if } F_{rad} = 0$$

If  $F_{rad}$  and  $F_{ax} \neq 0$ ; please contact Lenze.

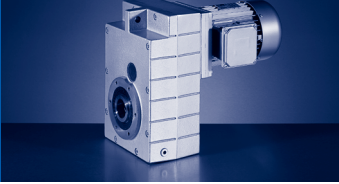


4

#### Effective direction factor $f_\alpha$ at output shaft



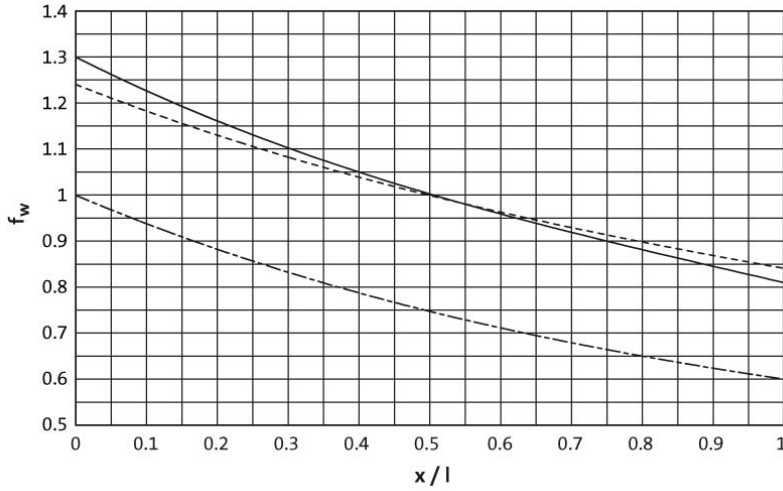
- Direction of rotation R
- - - Direction of rotation L



## GFL

GFL [N] - forces

### Additional load factor $f_w$ at output shaft

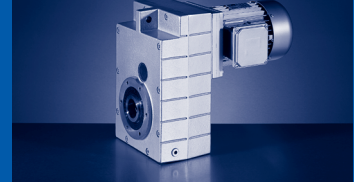


—— Solid shaft (V□□)      - · - Hollow shaft (H□□)  
 - - - Solid shaft with flange (V□K)

GFL□□-2/3□ H□□

| Size                                   | $n_2$ [r/min] |               |               |               |               |               |               |               |               |               |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Gearbox                                | 1000          | 630           | 400           | 250           | 160           | 100           | 63            | 40            | 25            | ≤16           |
| <b>Max. radial force, Hollow shaft</b> |               |               |               |               |               |               |               |               |               |               |
|  | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ |
|  | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           |
| GFL04                                  | 2100          | 2700          | 2800          | 3200          | 3800          | 4600          | 5500          | 6300          | 7000          | 7000          |
| GFL05                                  | 1800          | 2400          | 3000          | 3400          | 4100          | 5000          | 6000          | 7100          | 8000          | 8000          |
| GFL06                                  | 2400          | 3300          | 4300          | 4700          | 5000          | 6600          | 8500          | 10800         | 12000         | 12000         |
| GFL07                                  | 2200          | 3400          | 4500          | 5100          | 6400          | 7900          | 9300          | 11500         | 15000         | 16000         |
| GFL09                                  |               |               | 5000          | 6000          | 7200          | 10500         | 13000         | 15000         | 22000         | 24000         |
| GFL11                                  |               |               | 7300          | 8700          | 10000         | 14200         | 19000         | 23000         | 27000         | 30000         |
| GFL14                                  |               |               | 8000          | 9000          | 9500          | 11500         | 14000         | 18000         | 30000         | 45000         |
| <b>Max. axial force, Hollow shaft</b>  |               |               |               |               |               |               |               |               |               |               |
|  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  |
|  | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           |
| GFL04                                  | 1300          | 1700          | 2200          | 2600          | 3200          | 4200          | 5300          | 5500          | 5500          | 5500          |
| GFL05                                  | 1600          | 2200          | 2800          | 3600          | 4200          | 5900          | 6600          | 6600          | 6600          | 6600          |
| GFL06                                  | 2400          | 3200          | 4000          | 5200          | 6000          | 8500          | 10000         | 10000         | 10000         | 10000         |
| GFL07                                  | 2000          | 2700          | 3400          | 4700          | 6000          | 8500          | 12000         | 14000         | 14000         | 14000         |
| GFL09                                  |               |               | 3100          | 4200          | 5800          | 10000         | 13500         | 17000         | 21000         | 21000         |
| GFL11                                  |               |               | 4700          | 6000          | 7500          | 14000         | 19000         | 25000         | 27000         | 27000         |
| GFL14                                  |               |               | 4000          | 5000          | 6200          | 7500          | 11000         | 17500         | 31000         | 35000         |

- ▶ Application of force  $F_{rad}$ : at hollow shaft end face ( $x = 0$ )
- ▶  $F_{ax,max}$  only valid with  $F_{rad} = 0$
- ▶ Neither radial nor axial forces are permissible for the hollow shaft with shrink disc (S□□).

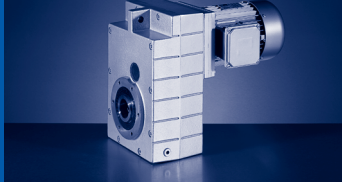


GFL□□-2/3□ V□R

| Size   | $n_2$ [r/min] |               |               |               |               |               |               |               |               |               |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|  | 1000          | 630           | 400           | 250           | 160           | 100           | 63            | 40            | 25            | ≤16           |
| <b>Max. radial force, Solid shaft without flange</b> |               |               |               |               |               |               |               |               |               |               |
|  | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ |
|  | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           |
| <b>GFL04</b>   | 1650          | 2100          | 2300          | 2700          | 3200          | 3600          | 3600          | 3600          | 3600          | 3600          |
| <b>GFL05</b>   | 1400          | 1900          | 2400          | 2700          | 3200          | 4000          | 4800          | 5800          | 6200          | 6200          |
| <b>GFL06</b>   | 1850          | 2500          | 3200          | 3600          | 3900          | 5100          | 6500          | 8400          | 9000          | 9000          |
| <b>GFL07</b>   | 1650          | 2600          | 3200          | 3600          | 3900          | 5100          | 6500          | 8400          | 9000          | 9000          |
| <b>GFL09<sup>1)</sup></b>                            |               |               | 3800          | 4400          | 5500          | 8000          | 10000         | 12000         | 18000         | 18000         |
| <b>GFL11<sup>1)</sup></b>                            |               |               | 5500          | 6300          | 7300          | 11200         | 14500         | 17400         | 20500         | 23000         |
| <b>GFL14</b>   |               |               | 47000         | 54000         | 62000         | 65000         | 65000         | 65000         | 65000         | 65000         |
| <b>Max. axial force, Solid shaft without flange</b>  |               |               |               |               |               |               |               |               |               |               |
|  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  |
|  | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           |
| <b>GFL04</b>   | 1300          | 1700          | 2200          | 2600          | 3200          | 4200          | 5300          | 5500          | 5500          | 5500          |
| <b>GFL05</b>   | 1600          | 2200          | 2800          | 3600          | 4200          | 5900          | 6600          | 6600          | 6600          | 6600          |
| <b>GFL06</b>   | 2400          | 3200          | 4000          | 5200          | 6000          | 8500          | 10000         | 10000         | 10000         | 10000         |
| <b>GFL07</b>   | 2000          | 2700          | 3400          | 4700          | 6000          | 8500          | 12000         | 14000         | 14000         | 14000         |
| <b>GFL09<sup>1)</sup></b>                            |               |               | 3100          | 4200          | 5800          | 10000         | 13500         | 17000         | 21000         | 21000         |
| <b>GFL11<sup>1)</sup></b>                            |               |               | 4700          | 6000          | 7500          | 14000         | 19000         | 25000         | 27000         | 27000         |
| <b>GFL14</b>   |               |               | 25000         | 27000         | 29000         | 32000         | 35000         | 35000         | 35000         | 35000         |

<sup>1)</sup> Reinforced output shaft bearings are available on request for V□R versions.

- ▶ Application of force  $F_{rad}$ : centre of shaft journal ( $x = l/2$ )
- ▶  $F_{ax,max}$  only valid with  $F_{rad} = 0$



# GFL

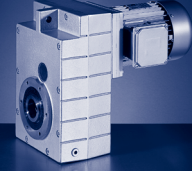
GFL [N] - forces

## GFL□□-2/3□ V□K

| Size  | n <sub>2</sub> [r/min] |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|---|------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|   | 1000                   | 630                  | 400                  | 250                  | 160                  | 100                  | 63                   | 40                   | 25                   | ≤16                  |
| <b>Max. radial force, Solid shaft with flange</b> |                        |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|   | F <sub>rad,max</sub>   | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> |
|   | [N]                    | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  |
| <b>GFL04</b>                                      | 2300                   | 2800                 | 3200                 | 3700                 | 4400                 | 4600                 | 4600                 | 4600                 | 4600                 | 4600                 |
| <b>GFL05</b>                                      | 2900                   | 3700                 | 4300                 | 5100                 | 5900                 | 6800                 | 7000                 | 7000                 | 7000                 | 7000                 |
| <b>GFL06</b>                                      | 4000                   | 5000                 | 6100                 | 7000                 | 7800                 | 9600                 | 10000                | 10000                | 10000                | 10000                |
| <b>GFL07</b>                                      | 4000                   | 5200                 | 6400                 | 7400                 | 8900                 | 10500                | 12000                | 13000                | 14000                | 14000                |
| <b>GFL09</b>                                      |                        |                      | 7800                 | 9000                 | 10500                | 14000                | 15000                | 15000                | 15000                | 15000                |
| <b>GFL11</b>                                      |                        |                      | 12500                | 14500                | 17000                | 21500                | 26000                | 30000                | 30000                | 30000                |
| <b>GFL14</b>                                      |                        |                      | 18000                | 20000                | 23000                | 27500                | 32000                | 38000                | 43000                | 43000                |
| <b>Max. axial force, Solid shaft with flange</b>  |                        |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|   | F <sub>ax,max</sub>    | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  |
|   | [N]                    | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  |
| <b>GFL04</b>                                      | 1300                   | 1700                 | 2200                 | 2600                 | 3200                 | 4200                 | 4400                 | 4400                 | 4400                 | 4400                 |
| <b>GFL05</b>                                      | 1800                   | 2400                 | 3100                 | 3900                 | 4800                 | 6400                 | 6600                 | 6600                 | 6600                 | 6600                 |
| <b>GFL06</b>                                      | 2500                   | 3400                 | 4300                 | 5500                 | 6500                 | 8500                 | 10000                | 10000                | 10000                | 10000                |
| <b>GFL07</b>                                      | 3600                   | 4800                 | 6100                 | 6500                 | 7000                 | 9500                 | 11500                | 11500                | 11500                | 11500                |
| <b>GFL09</b>                                      |                        |                      | 6100                 | 6500                 | 7000                 | 9500                 | 11500                | 11500                | 11500                | 11500                |
| <b>GFL11</b>                                      |                        |                      | 6800                 | 8500                 | 10500                | 17000                | 22000                | 27000                | 27000                | 27000                |
| <b>GFL14</b>                                      |                        |                      | 6000                 | 8000                 | 10000                | 13000                | 19000                | 26000                | 35000                | 35000                |

- ▶ Application of force F<sub>rad</sub>: centre of shaft journal (x = l/2)
- ▶ F<sub>ax,max</sub> only valid with F<sub>rad</sub> = 0

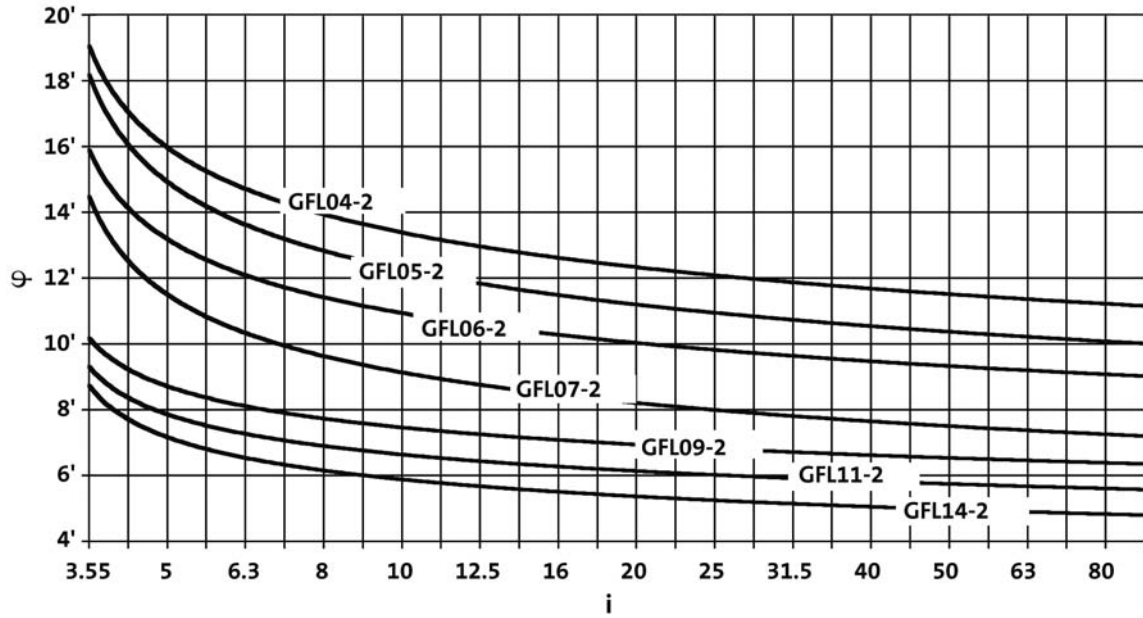




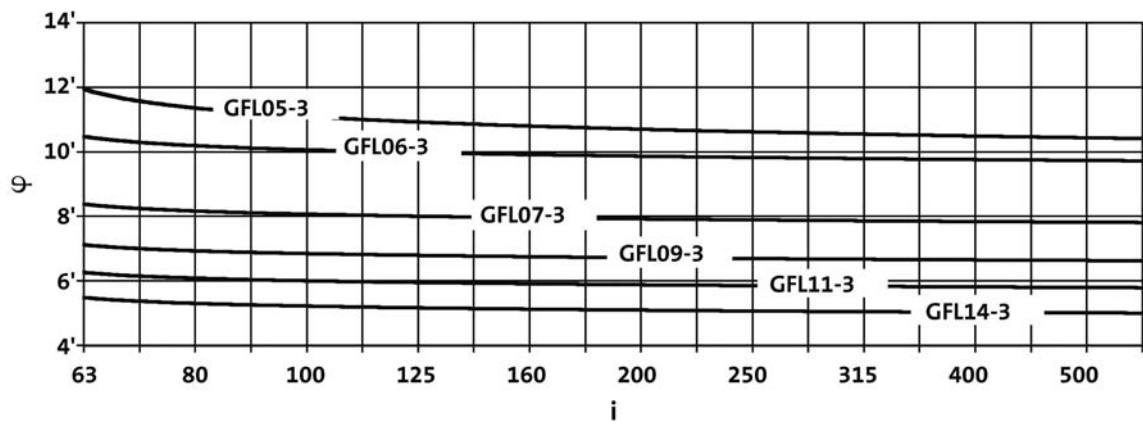
## Output backlash in angular minutes

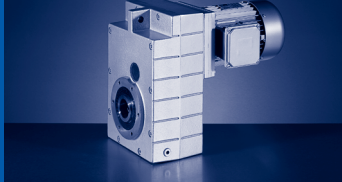
- ▶ Backlash  $\varphi$  depending on ratio  $i$

GFL04...14-2



GFL04...14-3





## GFL

GFL [kgcm<sup>2</sup>] - moments of inertia

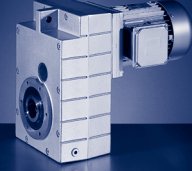
### GFL□□-2

- Moment of inertia (J) depending on ratio i

| Gearbox |   |                      | GFL04 | Gearbox |   |                      | GFL05 |
|---------|---|----------------------|-------|---------|---|----------------------|-------|
| 3.659   | J | [kgcm <sup>2</sup> ] | 1.510 | 3.333   | J | [kgcm <sup>2</sup> ] | 1.677 |
| 5.018   | J | [kgcm <sup>2</sup> ] | 0.858 | 4.571   | J | [kgcm <sup>2</sup> ] | 2.133 |
| 5.833   | J | [kgcm <sup>2</sup> ] | 0.925 | 5.133   | J | [kgcm <sup>2</sup> ] | 2.372 |
| 6.422   | J | [kgcm <sup>2</sup> ] | 0.555 | 5.667   | J | [kgcm <sup>2</sup> ] | 2.329 |
| 7.025   | J | [kgcm <sup>2</sup> ] | 0.473 | 6.400   | J | [kgcm <sup>2</sup> ] | 0.822 |
| 8.379   | J | [kgcm <sup>2</sup> ] | 0.666 | 7.040   | J | [kgcm <sup>2</sup> ] | 1.470 |
| 9.333   | J | [kgcm <sup>2</sup> ] | 0.613 | 7.771   | J | [kgcm <sup>2</sup> ] | 1.450 |
| 10.238  | J | [kgcm <sup>2</sup> ] | 0.366 | 9.010   | J | [kgcm <sup>2</sup> ] | 0.951 |
| 11.491  | J | [kgcm <sup>2</sup> ] | 0.410 | 9.946   | J | [kgcm <sup>2</sup> ] | 0.885 |
| 12.800  | J | [kgcm <sup>2</sup> ] | 0.382 | 11.360  | J | [kgcm <sup>2</sup> ] | 1.082 |
| 14.706  | J | [kgcm <sup>2</sup> ] | 0.282 | 12.800  | J | [kgcm <sup>2</sup> ] | 1.012 |
| 16.087  | J | [kgcm <sup>2</sup> ] | 0.245 | 14.538  | J | [kgcm <sup>2</sup> ] | 0.746 |
| 17.920  | J | [kgcm <sup>2</sup> ] | 0.230 | 15.904  | J | [kgcm <sup>2</sup> ] | 0.603 |
| 20.519  | J | [kgcm <sup>2</sup> ] | 0.171 | 17.920  | J | [kgcm <sup>2</sup> ] | 0.609 |
| 22.857  | J | [kgcm <sup>2</sup> ] | 0.163 | 20.286  | J | [kgcm <sup>2</sup> ] | 0.428 |
| 25.136  | J | [kgcm <sup>2</sup> ] | 0.129 | 22.857  | J | [kgcm <sup>2</sup> ] | 0.434 |
| 28.000  | J | [kgcm <sup>2</sup> ] | 0.123 | 24.850  | J | [kgcm <sup>2</sup> ] | 0.345 |
| 31.600  | J | [kgcm <sup>2</sup> ] | 0.086 | 28.000  | J | [kgcm <sup>2</sup> ] | 0.331 |
| 35.200  | J | [kgcm <sup>2</sup> ] | 0.082 | 32.344  | J | [kgcm <sup>2</sup> ] | 0.204 |
| 40.697  | J | [kgcm <sup>2</sup> ] | 0.058 | 36.444  | J | [kgcm <sup>2</sup> ] | 0.195 |
| 45.333  | J | [kgcm <sup>2</sup> ] | 0.056 | 40.233  | J | [kgcm <sup>2</sup> ] | 0.148 |
| 51.579  | J | [kgcm <sup>2</sup> ] | 0.038 | 45.333  | J | [kgcm <sup>2</sup> ] | 0.142 |
| 57.455  | J | [kgcm <sup>2</sup> ] | 0.037 | 52.067  | J | [kgcm <sup>2</sup> ] | 0.093 |
| 64.636  | J | [kgcm <sup>2</sup> ] | 0.026 | 58.667  | J | [kgcm <sup>2</sup> ] | 0.090 |
| 72.000  | J | [kgcm <sup>2</sup> ] | 0.025 | 63.190  | J | [kgcm <sup>2</sup> ] | 0.068 |
| 85.156  | J | [kgcm <sup>2</sup> ] | 0.016 | 71.200  | J | [kgcm <sup>2</sup> ] | 0.064 |
| 94.857  | J | [kgcm <sup>2</sup> ] | 0.015 | 80.763  | J | [kgcm <sup>2</sup> ] | 0.043 |
|         |   |                      |       | 91.000  | J | [kgcm <sup>2</sup> ] | 0.042 |

- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.

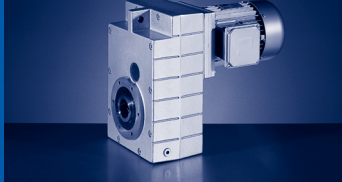
4



► Moment of inertia (J) depending on ratio i

| Gearbox |   |                      | GFL06 | Gearbox |   |                      | GFL07  |
|---------|---|----------------------|-------|---------|---|----------------------|--------|
| 3.675   | J | [kgcm <sup>2</sup> ] | 7.755 | 3.350   | J | [kgcm <sup>2</sup> ] | 19.570 |
| 5.211   | J | [kgcm <sup>2</sup> ] | 6.636 | 4.643   | J | [kgcm <sup>2</sup> ] | 11.988 |
| 5.750   | J | [kgcm <sup>2</sup> ] | 6.044 | 5.159   | J | [kgcm <sup>2</sup> ] | 11.120 |
| 6.450   | J | [kgcm <sup>2</sup> ] | 3.651 | 5.695   | J | [kgcm <sup>2</sup> ] | 18.094 |
| 7.147   | J | [kgcm <sup>2</sup> ] | 4.044 | 6.400   | J | [kgcm <sup>2</sup> ] | 9.831  |
| 8.400   | J | [kgcm <sup>2</sup> ] | 4.264 | 7.150   | J | [kgcm <sup>2</sup> ] | 11.878 |
| 9.463   | J | [kgcm <sup>2</sup> ] | 3.879 | 8.324   | J | [kgcm <sup>2</sup> ] | 13.113 |
| 10.092  | J | [kgcm <sup>2</sup> ] | 2.520 | 9.379   | J | [kgcm <sup>2</sup> ] | 12.037 |
| 11.520  | J | [kgcm <sup>2</sup> ] | 1.730 | 9.714   | J | [kgcm <sup>2</sup> ] | 8.030  |
| 12.978  | J | [kgcm <sup>2</sup> ] | 2.610 | 11.538  | J | [kgcm <sup>2</sup> ] | 8.520  |
| 14.743  | J | [kgcm <sup>2</sup> ] | 1.950 | 13.000  | J | [kgcm <sup>2</sup> ] | 7.970  |
| 16.128  | J | [kgcm <sup>2</sup> ] | 1.680 | 14.200  | J | [kgcm <sup>2</sup> ] | 6.350  |
| 18.169  | J | [kgcm <sup>2</sup> ] | 1.570 | 15.904  | J | [kgcm <sup>2</sup> ] | 5.270  |
| 20.571  | J | [kgcm <sup>2</sup> ] | 1.190 | 17.920  | J | [kgcm <sup>2</sup> ] | 4.980  |
| 23.175  | J | [kgcm <sup>2</sup> ] | 1.130 | 20.286  | J | [kgcm <sup>2</sup> ] | 3.470  |
| 25.200  | J | [kgcm <sup>2</sup> ] | 0.904 | 22.857  | J | [kgcm <sup>2</sup> ] | 3.268  |
| 28.389  | J | [kgcm <sup>2</sup> ] | 0.861 | 24.850  | J | [kgcm <sup>2</sup> ] | 2.645  |
| 32.800  | J | [kgcm <sup>2</sup> ] | 0.581 | 28.000  | J | [kgcm <sup>2</sup> ] | 2.525  |
| 36.951  | J | [kgcm <sup>2</sup> ] | 0.556 | 32.344  | J | [kgcm <sup>2</sup> ] | 1.690  |
| 40.800  | J | [kgcm <sup>2</sup> ] | 0.425 | 36.444  | J | [kgcm <sup>2</sup> ] | 1.610  |
| 45.963  | J | [kgcm <sup>2</sup> ] | 0.407 | 39.642  | J | [kgcm <sup>2</sup> ] | 1.250  |
| 52.800  | J | [kgcm <sup>2</sup> ] | 0.264 | 44.667  | J | [kgcm <sup>2</sup> ] | 1.200  |
| 59.481  | J | [kgcm <sup>2</sup> ] | 0.251 | 52.067  | J | [kgcm <sup>2</sup> ] | 0.783  |
| 64.080  | J | [kgcm <sup>2</sup> ] | 0.193 | 58.667  | J | [kgcm <sup>2</sup> ] | 0.753  |
| 72.189  | J | [kgcm <sup>2</sup> ] | 0.187 | 63.190  | J | [kgcm <sup>2</sup> ] | 0.573  |
| 81.000  | J | [kgcm <sup>2</sup> ] | 0.125 | 71.200  | J | [kgcm <sup>2</sup> ] | 0.555  |
| 91.250  | J | [kgcm <sup>2</sup> ] | 0.121 | 79.875  | J | [kgcm <sup>2</sup> ] | 0.366  |
|         |   |                      |       | 90.000  | J | [kgcm <sup>2</sup> ] | 0.358  |

- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.



## GFL

### GFL [kgcm<sup>2</sup>] - moments of inertia

► Moment of inertia (J) depending on ratio i

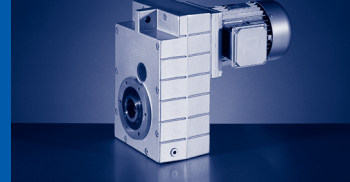
| Gearbox |   |                      | GFL09  | Gearbox |   |                      | GFL11   |
|---------|---|----------------------|--------|---------|---|----------------------|---------|
| 6.864   | J | [kgcm <sup>2</sup> ] | 41.300 | 6.864   | J | [kgcm <sup>2</sup> ] | 124.000 |
| 7.466   | J | [kgcm <sup>2</sup> ] | 38.700 | 7.466   | J | [kgcm <sup>2</sup> ] | 116.000 |
| 9.010   | J | [kgcm <sup>2</sup> ] | 26.800 | 9.010   | J | [kgcm <sup>2</sup> ] | 79.600  |
| 9.799   | J | [kgcm <sup>2</sup> ] | 25.300 | 9.799   | J | [kgcm <sup>2</sup> ] | 74.800  |
| 11.167  | J | [kgcm <sup>2</sup> ] | 19.500 | 10.720  | J | [kgcm <sup>2</sup> ] | 65.000  |
| 12.307  | J | [kgcm <sup>2</sup> ] | 27.600 | 12.480  | J | [kgcm <sup>2</sup> ] | 81.500  |
| 14.333  | J | [kgcm <sup>2</sup> ] | 20.000 | 14.538  | J | [kgcm <sup>2</sup> ] | 58.400  |
| 16.333  | J | [kgcm <sup>2</sup> ] | 15.500 | 15.904  | J | [kgcm <sup>2</sup> ] | 51.300  |
| 18.407  | J | [kgcm <sup>2</sup> ] | 14.600 | 17.920  | J | [kgcm <sup>2</sup> ] | 48.300  |
| 19.667  | J | [kgcm <sup>2</sup> ] | 12.100 | 20.286  | J | [kgcm <sup>2</sup> ] | 36.100  |
| 22.164  | J | [kgcm <sup>2</sup> ] | 11.300 | 22.857  | J | [kgcm <sup>2</sup> ] | 34.300  |
| 24.111  | J | [kgcm <sup>2</sup> ] | 9.040  | 24.850  | J | [kgcm <sup>2</sup> ] | 26.900  |
| 27.173  | J | [kgcm <sup>2</sup> ] | 8.630  | 28.000  | J | [kgcm <sup>2</sup> ] | 25.700  |
| 32.667  | J | [kgcm <sup>2</sup> ] | 5.430  | 32.739  | J | [kgcm <sup>2</sup> ] | 17.100  |
| 36.815  | J | [kgcm <sup>2</sup> ] | 5.210  | 36.889  | J | [kgcm <sup>2</sup> ] | 16.500  |
| 39.667  | J | [kgcm <sup>2</sup> ] | 4.070  | 40.233  | J | [kgcm <sup>2</sup> ] | 12.600  |
| 44.704  | J | [kgcm <sup>2</sup> ] | 3.920  | 45.333  | J | [kgcm <sup>2</sup> ] | 12.200  |
| 51.333  | J | [kgcm <sup>2</sup> ] | 2.590  | 52.067  | J | [kgcm <sup>2</sup> ] | 8.080   |
| 57.852  | J | [kgcm <sup>2</sup> ] | 2.500  | 58.667  | J | [kgcm <sup>2</sup> ] | 7.810   |
| 62.300  | J | [kgcm <sup>2</sup> ] | 1.890  | 63.190  | J | [kgcm <sup>2</sup> ] | 5.900   |
| 70.211  | J | [kgcm <sup>2</sup> ] | 1.830  | 71.200  | J | [kgcm <sup>2</sup> ] | 5.720   |
| 78.750  | J | [kgcm <sup>2</sup> ] | 1.250  | 79.875  | J | [kgcm <sup>2</sup> ] | 3.870   |
| 88.750  | J | [kgcm <sup>2</sup> ] | 1.210  | 90.000  | J | [kgcm <sup>2</sup> ] | 3.760   |

| Gearbox |   |                      | GFL14   |
|---------|---|----------------------|---------|
| 7.150   | J | [kgcm <sup>2</sup> ] | 344.000 |
| 7.777   | J | [kgcm <sup>2</sup> ] | 321.000 |
| 8.800   | J | [kgcm <sup>2</sup> ] | 247.000 |
| 9.571   | J | [kgcm <sup>2</sup> ] | 232.000 |
| 11.538  | J | [kgcm <sup>2</sup> ] | 242.000 |
| 13.000  | J | [kgcm <sup>2</sup> ] | 225.000 |
| 14.200  | J | [kgcm <sup>2</sup> ] | 625.000 |
| 15.620  | J | [kgcm <sup>2</sup> ] | 156.000 |
| 17.600  | J | [kgcm <sup>2</sup> ] | 146.000 |
| 19.948  | J | [kgcm <sup>2</sup> ] | 111.000 |
| 22.476  | J | [kgcm <sup>2</sup> ] | 105.000 |
| 24.456  | J | [kgcm <sup>2</sup> ] | 83.200  |
| 27.556  | J | [kgcm <sup>2</sup> ] | 79.400  |
| 32.344  | J | [kgcm <sup>2</sup> ] | 52.900  |
| 36.444  | J | [kgcm <sup>2</sup> ] | 50.700  |
| 39.642  | J | [kgcm <sup>2</sup> ] | 38.000  |
| 44.667  | J | [kgcm <sup>2</sup> ] | 36.600  |
| 52.067  | J | [kgcm <sup>2</sup> ] | 24.600  |
| 58.667  | J | [kgcm <sup>2</sup> ] | 23.800  |
| 63.190  | J | [kgcm <sup>2</sup> ] | 18.000  |
| 71.200  | J | [kgcm <sup>2</sup> ] | 17.400  |
| 79.875  | J | [kgcm <sup>2</sup> ] | 11.800  |
| 90.000  | J | [kgcm <sup>2</sup> ] | 11.500  |

- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.

4



GFL□□-3

► Moment of inertia (J) depending on ratio i

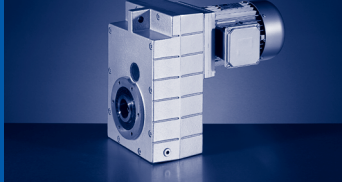
| Gearbox |   |                      | GFL05 |
|---------|---|----------------------|-------|
| 61.653  | J | [kgcm <sup>2</sup> ] | 0.202 |
| 78.639  | J | [kgcm <sup>2</sup> ] | 0.145 |
| 90.123  | J | [kgcm <sup>2</sup> ] | 0.197 |
| 101.547 | J | [kgcm <sup>2</sup> ] | 0.196 |
| 114.952 | J | [kgcm <sup>2</sup> ] | 0.142 |
| 129.524 | J | [kgcm <sup>2</sup> ] | 0.141 |
| 140.817 | J | [kgcm <sup>2</sup> ] | 0.109 |
| 158.667 | J | [kgcm <sup>2</sup> ] | 0.109 |
| 177.027 | J | [kgcm <sup>2</sup> ] | 0.073 |
| 199.467 | J | [kgcm <sup>2</sup> ] | 0.073 |
| 227.989 | J | [kgcm <sup>2</sup> ] | 0.051 |
| 256.889 | J | [kgcm <sup>2</sup> ] | 0.050 |
| 288.948 | J | [kgcm <sup>2</sup> ] | 0.033 |
| 325.576 | J | [kgcm <sup>2</sup> ] | 0.033 |
| 362.100 | J | [kgcm <sup>2</sup> ] | 0.023 |
| 408.000 | J | [kgcm <sup>2</sup> ] | 0.023 |
| 477.052 | J | [kgcm <sup>2</sup> ] | 0.014 |
| 537.524 | J | [kgcm <sup>2</sup> ] | 0.014 |

| Gearbox |   |                      | GFL06 |
|---------|---|----------------------|-------|
| 66.213  | J | [kgcm <sup>2</sup> ] | 0.292 |
| 72.000  | J | [kgcm <sup>2</sup> ] | 0.264 |
| 81.111  | J | [kgcm <sup>2</sup> ] | 0.259 |
| 88.200  | J | [kgcm <sup>2</sup> ] | 0.190 |
| 99.361  | J | [kgcm <sup>2</sup> ] | 0.187 |
| 116.571 | J | [kgcm <sup>2</sup> ] | 0.091 |
| 131.323 | J | [kgcm <sup>2</sup> ] | 0.208 |
| 144.320 | J | [kgcm <sup>2</sup> ] | 0.110 |
| 162.583 | J | [kgcm <sup>2</sup> ] | 0.109 |
| 179.520 | J | [kgcm <sup>2</sup> ] | 0.102 |
| 202.237 | J | [kgcm <sup>2</sup> ] | 0.101 |
| 231.200 | J | [kgcm <sup>2</sup> ] | 0.068 |
| 260.457 | J | [kgcm <sup>2</sup> ] | 0.067 |
| 293.018 | J | [kgcm <sup>2</sup> ] | 0.044 |
| 299.200 | J | [kgcm <sup>2</sup> ] | 0.064 |
| 367.200 | J | [kgcm <sup>2</sup> ] | 0.030 |
| 413.667 | J | [kgcm <sup>2</sup> ] | 0.030 |
| 475.200 | J | [kgcm <sup>2</sup> ] | 0.029 |
| 535.333 | J | [kgcm <sup>2</sup> ] | 0.028 |
| 576.720 | J | [kgcm <sup>2</sup> ] | 0.028 |
| 649.700 | J | [kgcm <sup>2</sup> ] | 0.028 |
| 759.806 | J | [kgcm <sup>2</sup> ] | 0.017 |
| 855.954 | J | [kgcm <sup>2</sup> ] | 0.017 |

| Gearbox |   |                      | GFL07 |
|---------|---|----------------------|-------|
| 65.306  | J | [kgcm <sup>2</sup> ] | 0.790 |
| 72.452  | J | [kgcm <sup>2</sup> ] | 0.894 |
| 81.636  | J | [kgcm <sup>2</sup> ] | 0.880 |
| 92.413  | J | [kgcm <sup>2</sup> ] | 0.609 |
| 104.127 | J | [kgcm <sup>2</sup> ] | 0.601 |
| 113.206 | J | [kgcm <sup>2</sup> ] | 0.448 |
| 127.556 | J | [kgcm <sup>2</sup> ] | 0.442 |
| 147.347 | J | [kgcm <sup>2</sup> ] | 0.275 |
| 166.025 | J | [kgcm <sup>2</sup> ] | 0.271 |
| 183.285 | J | [kgcm <sup>2</sup> ] | 0.194 |
| 206.519 | J | [kgcm <sup>2</sup> ] | 0.192 |
| 224.636 | J | [kgcm <sup>2</sup> ] | 0.180 |
| 253.111 | J | [kgcm <sup>2</sup> ] | 0.179 |
| 290.706 | J | [kgcm <sup>2</sup> ] | 0.112 |
| 327.556 | J | [kgcm <sup>2</sup> ] | 0.111 |
| 352.811 | J | [kgcm <sup>2</sup> ] | 0.081 |
| 397.533 | J | [kgcm <sup>2</sup> ] | 0.080 |
| 430.222 | J | [kgcm <sup>2</sup> ] | 0.104 |
| 522.133 | J | [kgcm <sup>2</sup> ] | 0.075 |
| 562.391 | J | [kgcm <sup>2</sup> ] | 0.073 |
| 633.680 | J | [kgcm <sup>2</sup> ] | 0.073 |
| 718.786 | J | [kgcm <sup>2</sup> ] | 0.047 |
| 809.900 | J | [kgcm <sup>2</sup> ] | 0.046 |

| Gearbox |   |                      | GFL09 |
|---------|---|----------------------|-------|
| 63.326  | J | [kgcm <sup>2</sup> ] | 2.344 |
| 73.173  | J | [kgcm <sup>2</sup> ] | 2.472 |
| 82.465  | J | [kgcm <sup>2</sup> ] | 2.428 |
| 93.333  | J | [kgcm <sup>2</sup> ] | 1.679 |
| 105.185 | J | [kgcm <sup>2</sup> ] | 1.651 |
| 114.333 | J | [kgcm <sup>2</sup> ] | 1.230 |
| 128.852 | J | [kgcm <sup>2</sup> ] | 1.212 |
| 148.815 | J | [kgcm <sup>2</sup> ] | 0.773 |
| 167.712 | J | [kgcm <sup>2</sup> ] | 0.762 |
| 185.111 | J | [kgcm <sup>2</sup> ] | 0.548 |
| 208.617 | J | [kgcm <sup>2</sup> ] | 0.541 |
| 224.778 | J | [kgcm <sup>2</sup> ] | 0.505 |
| 253.321 | J | [kgcm <sup>2</sup> ] | 0.500 |
| 290.889 | J | [kgcm <sup>2</sup> ] | 0.313 |
| 327.827 | J | [kgcm <sup>2</sup> ] | 0.310 |
| 353.033 | J | [kgcm <sup>2</sup> ] | 0.226 |
| 397.863 | J | [kgcm <sup>2</sup> ] | 0.224 |
| 424.247 | J | [kgcm <sup>2</sup> ] | 0.286 |
| 514.881 | J | [kgcm <sup>2</sup> ] | 0.208 |
| 554.470 | J | [kgcm <sup>2</sup> ] | 0.201 |
| 624.879 | J | [kgcm <sup>2</sup> ] | 0.200 |
| 700.875 | J | [kgcm <sup>2</sup> ] | 0.130 |
| 789.875 | J | [kgcm <sup>2</sup> ] | 0.129 |

- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.



## GFL

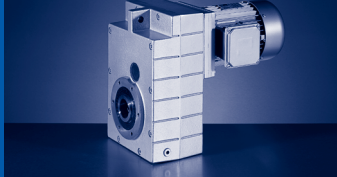
### GFL [kgcm<sup>2</sup>] - moments of inertia

► Moment of inertia (J) depending on ratio i

| Gearbox |   |                      | GFL11 | Gearbox |   |                      | GFL14  |
|---------|---|----------------------|-------|---------|---|----------------------|--------|
| 65.306  | J | [kgcm <sup>2</sup> ] | 6.967 | 64.296  | J | [kgcm <sup>2</sup> ] | 26.316 |
| 73.335  | J | [kgcm <sup>2</sup> ] | 7.844 | 68.708  | J | [kgcm <sup>2</sup> ] | 19.862 |
| 82.631  | J | [kgcm <sup>2</sup> ] | 7.707 | 77.418  | J | [kgcm <sup>2</sup> ] | 19.381 |
| 93.540  | J | [kgcm <sup>2</sup> ] | 5.050 | 85.037  | J | [kgcm <sup>2</sup> ] | 21.590 |
| 105.397 | J | [kgcm <sup>2</sup> ] | 4.965 | 104.889 | J | [kgcm <sup>2</sup> ] | 9.324  |
| 114.586 | J | [kgcm <sup>2</sup> ] | 3.712 | 114.126 | J | [kgcm <sup>2</sup> ] | 8.318  |
| 129.111 | J | [kgcm <sup>2</sup> ] | 3.656 | 128.593 | J | [kgcm <sup>2</sup> ] | 8.144  |
| 149.144 | J | [kgcm <sup>2</sup> ] | 2.299 | 136.889 | J | [kgcm <sup>2</sup> ] | 16.779 |
| 168.049 | J | [kgcm <sup>2</sup> ] | 2.265 | 156.148 | J | [kgcm <sup>2</sup> ] | 5.917  |
| 182.792 | J | [kgcm <sup>2</sup> ] | 1.661 | 170.074 | J | [kgcm <sup>2</sup> ] | 6.962  |
| 205.963 | J | [kgcm <sup>2</sup> ] | 1.639 | 202.074 | J | [kgcm <sup>2</sup> ] | 3.692  |
| 224.636 | J | [kgcm <sup>2</sup> ] | 1.515 | 224.636 | J | [kgcm <sup>2</sup> ] | 4.742  |
| 253.111 | J | [kgcm <sup>2</sup> ] | 1.501 | 253.111 | J | [kgcm <sup>2</sup> ] | 4.697  |
| 267.259 | J | [kgcm <sup>2</sup> ] | 1.865 | 273.778 | J | [kgcm <sup>2</sup> ] | 5.759  |
| 327.556 | J | [kgcm <sup>2</sup> ] | 1.373 | 332.444 | J | [kgcm <sup>2</sup> ] | 4.300  |
| 358.077 | J | [kgcm <sup>2</sup> ] | 0.679 | 352.811 | J | [kgcm <sup>2</sup> ] | 2.163  |
| 403.467 | J | [kgcm <sup>2</sup> ] | 0.673 | 397.533 | J | [kgcm <sup>2</sup> ] | 2.145  |
| 430.222 | J | [kgcm <sup>2</sup> ] | 0.853 | 430.222 | J | [kgcm <sup>2</sup> ] | 2.727  |
| 522.133 | J | [kgcm <sup>2</sup> ] | 0.623 | 522.133 | J | [kgcm <sup>2</sup> ] | 1.984  |
| 562.391 | J | [kgcm <sup>2</sup> ] | 0.599 | 562.391 | J | [kgcm <sup>2</sup> ] | 1.910  |
| 633.680 | J | [kgcm <sup>2</sup> ] | 0.596 | 633.680 | J | [kgcm <sup>2</sup> ] | 1.903  |
| 710.888 | J | [kgcm <sup>2</sup> ] | 0.385 | 710.888 | J | [kgcm <sup>2</sup> ] | 1.259  |
| 801.000 | J | [kgcm <sup>2</sup> ] | 0.384 | 801.000 | J | [kgcm <sup>2</sup> ] | 1.254  |

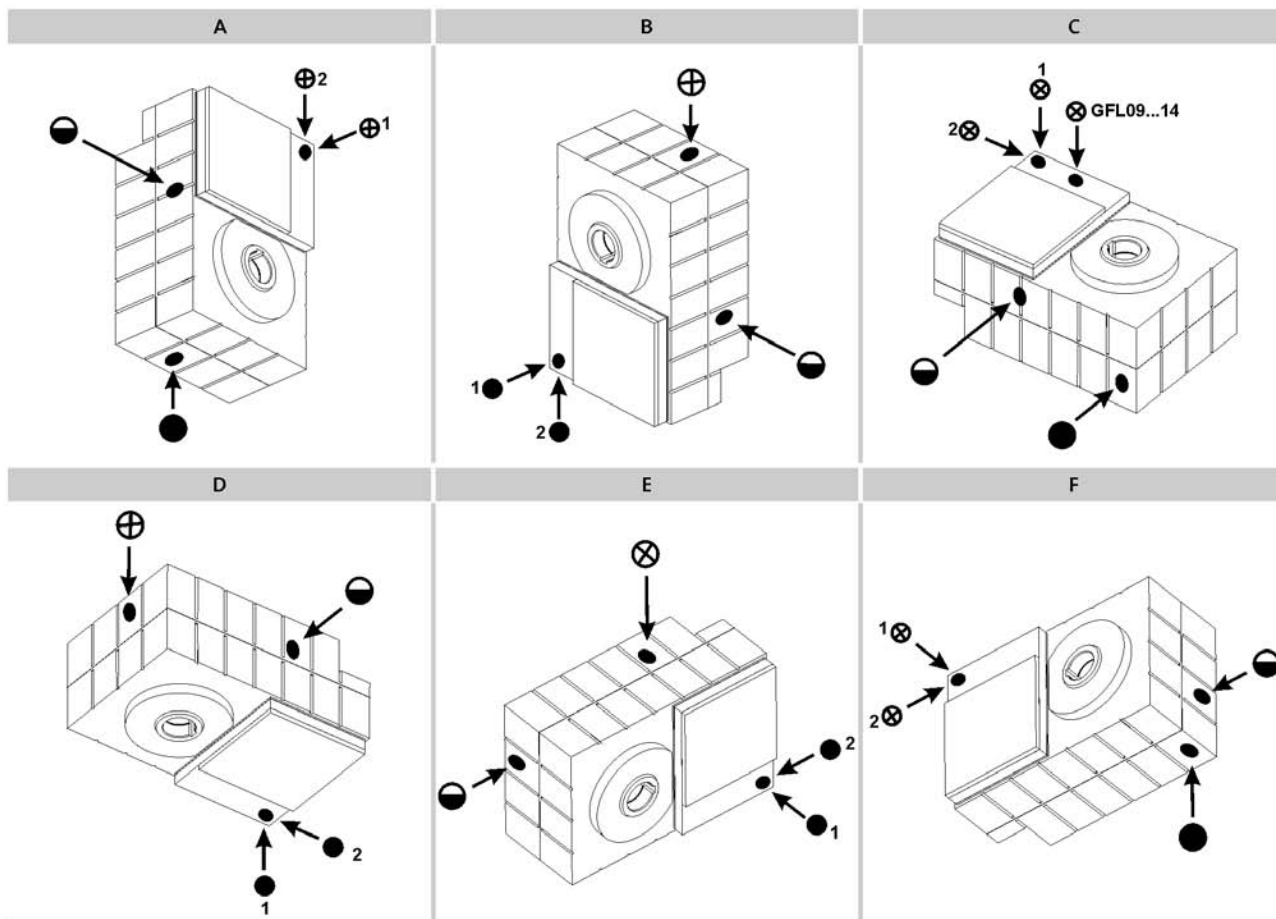
- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.

4



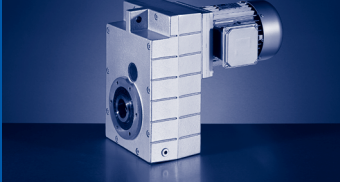
## Position of ventilation, sealing elements and oil level check

GFL05...14-2



- A ... F Mounting position  
 ⊗ Ventilation / Oil filler plug  
 ● Oil drain plug  
 ◐ Oil control plug  
 \* On both sides  
 \*\* On opposite side

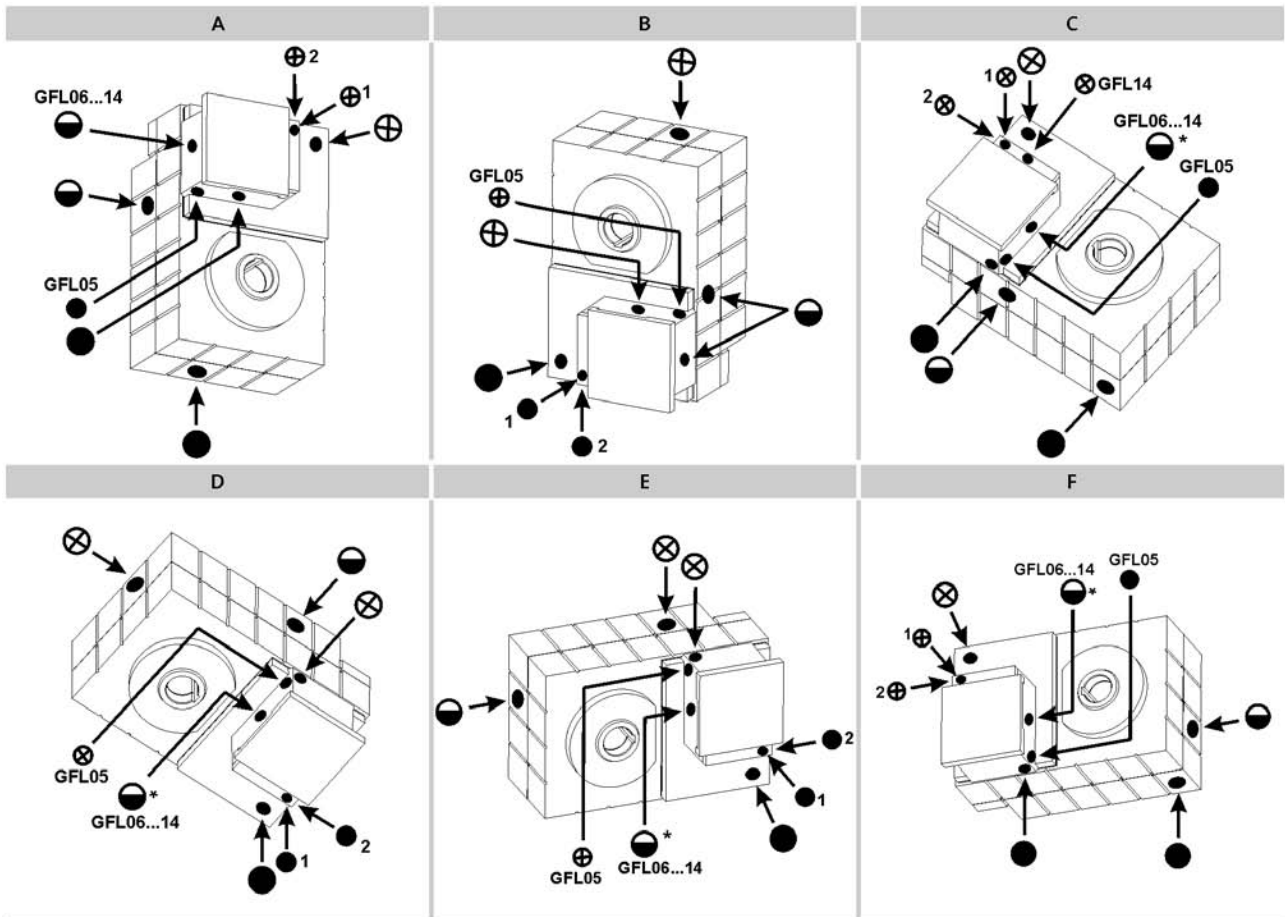
- Pos.1 standard  
 Pos.2 only with:  
 ▶ GFL05-2M □□□ 090C□□  
 ▶ GFL05-2M □□□ 100C□□  
 ▶ GFL06-2M □□□ 112C□□



# GFL

GFL [ ⊗ ] - ventilation

## GFL05...14-3

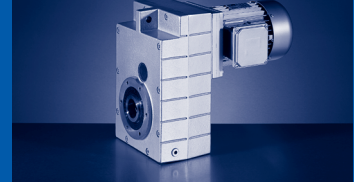


- A ... F Mounting position  
 ⊗ Ventilation / Oil filler plug  
 ● Oil drain plug  
 ◐ Oil control plug  
 \* On both sides  
 \*\* On opposite side

- Item 1 standard  
 Item 2 only with:  
 ▶ GFL07-3M □□□ 090C□□  
 ▶ GFL07-3M □□□ 100C□□  
 ▶ GFL09-3M □□□ 112C□□

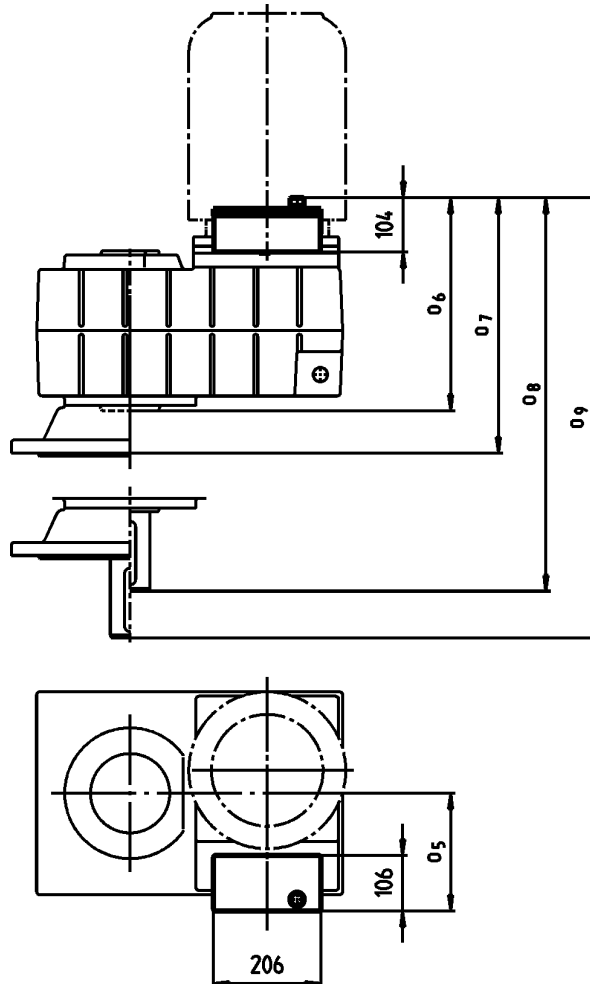
4





### Compensation reservoir for mounting position C

GFL□□-2



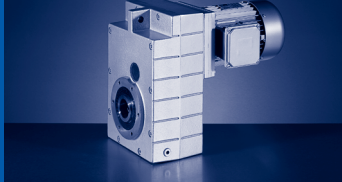
4

| Motor        | 090<br>100     |                |                |                |                | 112            |                |                |                |                |
|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | o <sub>5</sub> | o <sub>6</sub> | o <sub>7</sub> | o <sub>8</sub> | o <sub>9</sub> | o <sub>5</sub> | o <sub>6</sub> | o <sub>7</sub> | o <sub>8</sub> | o <sub>9</sub> |
|              | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           |
| <b>GFL09</b> | 165            | 344            | 405            | 464            | 525            | 187            | 344            | 405            | 464            | 525            |
| <b>GFL11</b> | 154            | 387            | 448            | 547            | 608            | 176            | 391            | 452            | 551            | 612            |
| <b>GFL14</b> |                |                |                |                |                | 181            | 446            | 507            | 646            | 707            |

| Motor        | 132            |                |                |                |                |                |                |                |                |                |
|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | o <sub>5</sub> | o <sub>6</sub> | o <sub>7</sub> | o <sub>8</sub> | o <sub>9</sub> | o <sub>5</sub> | o <sub>6</sub> | o <sub>7</sub> | o <sub>8</sub> | o <sub>9</sub> |
|              | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           |
| <b>GFL09</b> | 204            | 344            | 405            | 464            | 525            | 204            | 344            | 405            | 464            | 525            |
| <b>GFL11</b> | 200            | 391            | 452            | 551            | 612            | 200            | 391            | 452            | 551            | 612            |
| <b>GFL14</b> | 211            | 446            | 507            | 646            | 707            | 211            | 446            | 507            | 646            | 707            |

- ▶ Terminal box position 3 not permitted.
- ▶ Foot in position 3 not permitted.



# GFL

GFL [kg] - MF□MA

## GFL□□-2M HAR / HBR

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|---|------|------------------|------------------|------------------|--------|
| GFL04 | m | [kg] | 12               | 14               | 19               |        |
| GFL05 | m | [kg] | 25               | 28               | 32               | 40     |
| GFL06 | m | [kg] | 41               | 43               | 47               | 56     |
| GFL07 | m | [kg] |                  |                  | 75               | 83     |
| GFL09 | m | [kg] |                  |                  |                  | 132    |

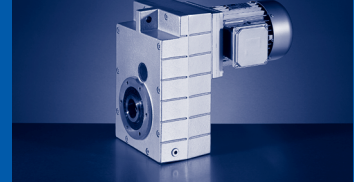
|       |   |      | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|---|------|------------------|--------|------------------|--------|
| GFL05 | m | [kg] | 49               |        |                  |        |
| GFL06 | m | [kg] | 64               | 77     |                  |        |
| GFL07 | m | [kg] | 91               | 104    | 134              |        |
| GFL09 | m | [kg] | 141              | 153    |                  | 184    |
| GFL11 | m | [kg] | 233              | 245    |                  | 274    |
| GFL14 | m | [kg] |                  | 396    |                  | 424    |

## GFL□□-2M HCR / HDR

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|---|------|------------------|------------------|------------------|--------|
| GFL04 | m | [kg] | 11               | 13               | 18               |        |
| GFL05 | m | [kg] | 24               | 26               | 31               | 39     |
| GFL06 | m | [kg] | 38               | 40               | 45               | 53     |
| GFL07 | m | [kg] |                  |                  | 71               | 79     |
| GFL09 | m | [kg] |                  |                  |                  | 125    |

|       |   |      | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|---|------|------------------|--------|------------------|--------|
| GFL05 | m | [kg] | 47               |        |                  |        |
| GFL06 | m | [kg] | 62               | 74     |                  |        |
| GFL07 | m | [kg] | 87               | 100    | 130              |        |
| GFL09 | m | [kg] | 134              | 146    |                  | 177    |
| GFL11 | m | [kg] | 219              | 231    |                  | 260    |
| GFL14 | m | [kg] |                  | 373    |                  | 401    |

- Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



## GFL□□-2M HAK

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|---|------|------------------|------------------|------------------|--------|
| GFL04 | m | [kg] | 14               | 16               | 22               |        |
| GFL05 | m | [kg] | 29               | 32               | 36               | 44     |
| GFL06 | m | [kg] | 48               | 50               | 54               | 63     |
| GFL07 | m | [kg] |                  |                  | 86               | 94     |
| GFL09 | m | [kg] |                  |                  |                  | 148    |

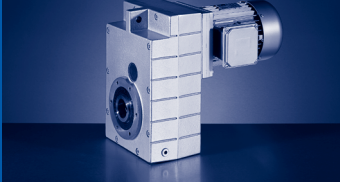
|       |   |      | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|---|------|------------------|--------|------------------|--------|
| GFL05 | m | [kg] | 53               |        |                  |        |
| GFL06 | m | [kg] | 71               | 84     |                  |        |
| GFL07 | m | [kg] | 102              | 115    | 145              |        |
| GFL09 | m | [kg] | 157              | 169    |                  | 200    |
| GFL11 | m | [kg] | 257              | 269    |                  | 298    |
| GFL14 | m | [kg] |                  | 429    |                  | 457    |

## GFL□□-2M HCK

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|---|------|------------------|------------------|------------------|--------|
| GFL04 | m | [kg] | 13               | 15               | 21               |        |
| GFL05 | m | [kg] | 28               | 30               | 35               | 43     |
| GFL06 | m | [kg] | 45               | 47               | 52               | 60     |
| GFL07 | m | [kg] |                  |                  | 82               | 90     |
| GFL09 | m | [kg] |                  |                  |                  | 141    |

|       |   |      | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|---|------|------------------|--------|------------------|--------|
| GFL05 | m | [kg] | 51               |        |                  |        |
| GFL06 | m | [kg] | 69               | 81     |                  |        |
| GFL07 | m | [kg] | 98               | 111    | 141              |        |
| GFL09 | m | [kg] | 150              | 162    |                  | 193    |
| GFL11 | m | [kg] | 243              | 255    |                  | 284    |
| GFL14 | m | [kg] |                  | 406    |                  | 434    |

- Weights with oil filling for mounting position A; all values are approximate.  
The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



# GFL

GFL [kg] - MF□MA

## GFL□□-2M VAR / VBR

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|---|------|------------------|------------------|------------------|--------|
| GFL04 | m | [kg] | 12               | 15               | 20               | 27     |
| GFL05 | m | [kg] | 26               | 29               | 33               | 41     |
| GFL06 | m | [kg] | 43               | 45               | 50               | 58     |
| GFL07 | m | [kg] |                  |                  | 80               | 88     |
| GFL09 | m | [kg] |                  |                  |                  | 140    |

|       |   |      | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|---|------|------------------|--------|------------------|--------|
| GFL05 | m | [kg] | 50               |        |                  |        |
| GFL06 | m | [kg] | 67               | 79     |                  |        |
| GFL07 | m | [kg] | 96               | 109    | 139              |        |
| GFL09 | m | [kg] | 149              | 161    |                  | 192    |
| GFL11 | m | [kg] | 249              | 261    |                  | 290    |
| GFL14 | m | [kg] |                  | 429    |                  | 457    |

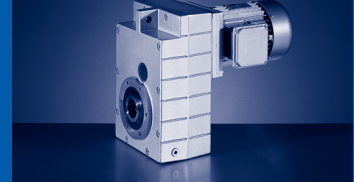
## GFL□□-2M VCR / VDR

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|---|------|------------------|------------------|------------------|--------|
| GFL04 | m | [kg] | 11               | 14               | 19               | 26     |
| GFL05 | m | [kg] | 25               | 27               | 32               | 40     |
| GFL06 | m | [kg] | 41               | 43               | 47               | 56     |
| GFL07 | m | [kg] |                  |                  | 76               | 84     |
| GFL09 | m | [kg] |                  |                  |                  | 133    |

|       |   |      | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|---|------|------------------|--------|------------------|--------|
| GFL05 | m | [kg] | 48               |        |                  |        |
| GFL06 | m | [kg] | 64               | 77     |                  |        |
| GFL07 | m | [kg] | 92               | 105    | 135              |        |
| GFL09 | m | [kg] | 142              | 154    |                  | 185    |
| GFL11 | m | [kg] | 235              | 247    |                  | 276    |
| GFL14 | m | [kg] |                  | 406    |                  | 434    |

- Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).

4



### GFL□□-2M VAK

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|--------|------------------|------------------|------------------|--------|
| GFL04 | m [kg] | 15               | 17               | 22               | 30     |
| GFL05 | m [kg] | 30               | 33               | 37               | 45     |
| GFL06 | m [kg] | 50               | 52               | 57               | 65     |
| GFL07 | m [kg] |                  |                  | 91               | 99     |
| GFL09 | m [kg] |                  |                  |                  | 156    |

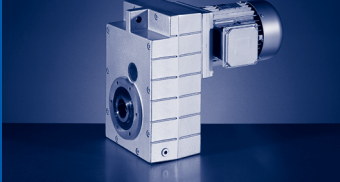
|       |        | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|--------|------------------|--------|------------------|--------|
| GFL05 | m [kg] | 54               |        |                  |        |
| GFL06 | m [kg] | 74               | 86     |                  |        |
| GFL07 | m [kg] | 107              | 120    | 150              |        |
| GFL09 | m [kg] | 165              | 177    |                  | 208    |
| GFL11 | m [kg] | 273              | 285    |                  | 314    |
| GFL14 | m [kg] |                  | 462    |                  | 490    |

### GFL□□-2M VCK

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|--------|------------------|------------------|------------------|--------|
| GFL04 | m [kg] | 14               | 16               | 21               | 29     |
| GFL05 | m [kg] | 29               | 31               | 36               | 44     |
| GFL06 | m [kg] | 48               | 50               | 54               | 63     |
| GFL07 | m [kg] |                  |                  | 87               | 95     |
| GFL09 | m [kg] |                  |                  |                  | 149    |

|       |        | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|--------|------------------|--------|------------------|--------|
| GFL05 | m [kg] | 52               |        |                  |        |
| GFL06 | m [kg] | 71               | 84     |                  |        |
| GFL07 | m [kg] | 103              | 116    | 146              |        |
| GFL09 | m [kg] | 158              | 170    |                  | 201    |
| GFL11 | m [kg] | 259              | 271    |                  | 300    |
| GFL14 | m [kg] |                  | 439    |                  | 467    |

- Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



## GFL

GFL [kg] - MF□MA

### GFL□□-2M SAR / SBR

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|---|------|------------------|------------------|------------------|--------|
| GFL04 | m | [kg] | 12               | 15               | 20               | 27     |
| GFL05 | m | [kg] | 26               | 29               | 33               | 41     |
| GFL06 | m | [kg] | 42               | 44               | 48               | 57     |
| GFL07 | m | [kg] |                  |                  | 76               | 84     |
| GFL09 | m | [kg] |                  |                  |                  | 135    |

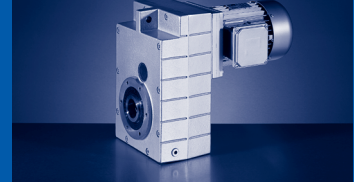
|       |   |      | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|---|------|------------------|--------|------------------|--------|
| GFL05 | m | [kg] | 50               |        |                  |        |
| GFL06 | m | [kg] | 65               | 78     |                  |        |
| GFL07 | m | [kg] | 93               | 106    | 135              |        |
| GFL09 | m | [kg] | 144              | 156    |                  | 187    |
| GFL11 | m | [kg] | 238              | 250    |                  | 279    |
| GFL14 | m | [kg] |                  | 407    |                  | 435    |

### GFL□□-2M SCR / SDR

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|---|------|------------------|------------------|------------------|--------|
| GFL04 | m | [kg] | 11               | 14               | 19               | 26     |
| GFL05 | m | [kg] | 25               | 27               | 32               | 40     |
| GFL06 | m | [kg] | 39               | 41               | 46               | 54     |
| GFL07 | m | [kg] |                  |                  | 72               | 80     |
| GFL09 | m | [kg] |                  |                  |                  | 128    |

|       |   |      | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|---|------|------------------|--------|------------------|--------|
| GFL05 | m | [kg] | 48               |        |                  |        |
| GFL06 | m | [kg] | 63               | 75     |                  |        |
| GFL07 | m | [kg] | 89               | 102    | 131              |        |
| GFL09 | m | [kg] | 137              | 149    |                  | 180    |
| GFL11 | m | [kg] | 224              | 236    |                  | 265    |
| GFL14 | m | [kg] |                  | 384    |                  | 412    |

- Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



### GFL□□-2M SAK

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|---|------|------------------|------------------|------------------|--------|
| GFL05 | m | [kg] | 30               | 33               | 37               | 45     |
| GFL06 | m | [kg] | 49               | 51               | 55               | 64     |
| GFL07 | m | [kg] |                  |                  | 87               | 95     |
| GFL09 | m | [kg] |                  |                  |                  | 151    |

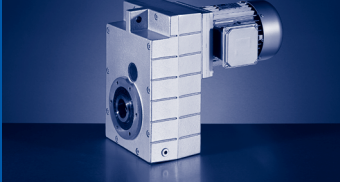
|       |   |      | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|---|------|------------------|--------|------------------|--------|
| GFL05 | m | [kg] | 54               |        |                  |        |
| GFL06 | m | [kg] | 72               | 85     |                  |        |
| GFL07 | m | [kg] | 104              | 117    | 146              |        |
| GFL09 | m | [kg] | 160              | 172    |                  | 203    |
| GFL11 | m | [kg] | 262              | 274    |                  | 303    |
| GFL14 | m | [kg] |                  | 440    |                  | 468    |

### GFL□□-2M SCK

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|---|------|------------------|------------------|------------------|--------|
| GFL05 | m | [kg] | 29               | 31               | 36               | 44     |
| GFL06 | m | [kg] | 46               | 48               | 53               | 61     |
| GFL07 | m | [kg] |                  |                  | 83               | 91     |
| GFL09 | m | [kg] |                  |                  |                  | 144    |

|       |   |      | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|---|------|------------------|--------|------------------|--------|
| GFL05 | m | [kg] | 52               |        |                  |        |
| GFL06 | m | [kg] | 70               | 82     |                  |        |
| GFL07 | m | [kg] | 100              | 113    | 142              |        |
| GFL09 | m | [kg] | 153              | 165    |                  | 196    |
| GFL11 | m | [kg] | 248              | 260    |                  | 289    |
| GFL14 | m | [kg] |                  | 417    |                  | 445    |

- Weights with oil filling for mounting position A; all values are approximate.  
The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



# GFL

GFL [kg] - MF□MA

## GFL□□-3M HAR / HBR

|       |        | 063C32<br>063C42 | 071C32 | 071C42 | 080C32<br>080C42 |
|-------|--------|------------------|--------|--------|------------------|
| GFL05 | m [kg] | 26               | 28     |        |                  |
| GFL06 | m [kg] | 44               |        | 46     | 51               |
| GFL07 | m [kg] | 76               |        | 78     | 83               |
| GFL09 | m [kg] | 130              |        | 132    | 137              |
| GFL11 | m [kg] |                  |        |        | 237              |

|       |        | 090C32 | 100C12<br>100C32 | 112C22 | 132C12 | 132C22<br>132C32 |
|-------|--------|--------|------------------|--------|--------|------------------|
| GFL07 | m [kg] | 91     |                  |        |        |                  |
| GFL09 | m [kg] | 145    | 154              |        |        |                  |
| GFL11 | m [kg] | 245    | 254              | 267    | 297    |                  |
| GFL14 | m [kg] | 411    | 419              | 432    |        | 462              |

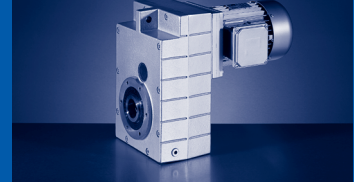
## GFL□□-3M HCR / HDR

|       |        | 063C32<br>063C42 | 071C32 | 071C42 | 080C32<br>080C42 |
|-------|--------|------------------|--------|--------|------------------|
| GFL05 | m [kg] | 25               | 27     |        |                  |
| GFL06 | m [kg] | 42               |        | 44     | 49               |
| GFL07 | m [kg] | 72               |        | 74     | 79               |
| GFL09 | m [kg] | 123              |        | 125    | 130              |
| GFL11 | m [kg] |                  |        |        | 223              |

|       |        | 090C32 | 100C12<br>100C32 | 112C22 | 132C12 | 132C22<br>132C32 |
|-------|--------|--------|------------------|--------|--------|------------------|
| GFL07 | m [kg] | 87     |                  |        |        |                  |
| GFL09 | m [kg] | 138    | 147              |        |        |                  |
| GFL11 | m [kg] | 231    | 240              | 253    | 283    |                  |
| GFL14 | m [kg] | 388    | 396              | 409    |        | 439              |

- Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).





### GFL□□-3M HAK

|       |   |      | 063C32<br>063C42 | 071C32 | 071C42 | 080C32<br>080C42 |
|-------|---|------|------------------|--------|--------|------------------|
| GFL05 | m | [kg] | 30               | 32     |        |                  |
| GFL06 | m | [kg] | 51               |        | 53     | 58               |
| GFL07 | m | [kg] | 87               |        | 89     | 94               |
| GFL09 | m | [kg] | 146              |        | 148    | 153              |
| GFL11 | m | [kg] |                  |        |        | 261              |

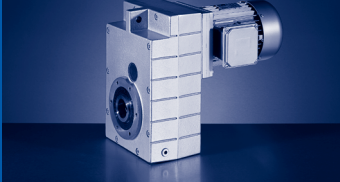
|       |   |      | 090C32 | 100C12<br>100C32 | 112C22 | 132C12 | 132C22<br>132C32 |
|-------|---|------|--------|------------------|--------|--------|------------------|
| GFL07 | m | [kg] | 102    |                  |        |        |                  |
| GFL09 | m | [kg] | 161    | 170              |        |        |                  |
| GFL11 | m | [kg] | 269    | 278              | 291    | 321    |                  |
| GFL14 | m | [kg] | 444    | 452              | 465    |        | 495              |

### GFL□□-3M HCK

|       |   |      | 063C32<br>063C42 | 071C32 | 071C42 | 080C32<br>080C42 |
|-------|---|------|------------------|--------|--------|------------------|
| GFL05 | m | [kg] | 29               | 31     |        |                  |
| GFL06 | m | [kg] | 49               |        | 51     | 56               |
| GFL07 | m | [kg] | 83               |        | 85     | 90               |
| GFL09 | m | [kg] | 139              |        | 141    | 146              |
| GFL11 | m | [kg] |                  |        |        | 247              |

|       |   |      | 090C32 | 100C12<br>100C32 | 112C22 | 132C12 | 132C22<br>132C32 |
|-------|---|------|--------|------------------|--------|--------|------------------|
| GFL07 | m | [kg] | 98     |                  |        |        |                  |
| GFL09 | m | [kg] | 154    | 163              |        |        |                  |
| GFL11 | m | [kg] | 255    | 264              | 277    | 307    |                  |
| GFL14 | m | [kg] | 421    | 429              | 442    |        | 472              |

- Weights with oil filling for mounting position A; all values are approximate.  
The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



# GFL

GFL [kg] - MF□MA

## GFL□□-3M VAR / VBR

|       |        | 063C32<br>063C42 | 071C32 | 071C42 | 080C32<br>080C42 |
|-------|--------|------------------|--------|--------|------------------|
| GFL05 | m [kg] | 27               | 29     |        |                  |
| GFL06 | m [kg] | 47               |        | 49     | 54               |
| GFL07 | m [kg] | 81               |        | 83     | 88               |
| GFL09 | m [kg] | 138              |        | 140    | 145              |
| GFL11 | m [kg] |                  |        |        | 253              |

|       |        | 090C32 | 100C12<br>100C32 | 112C22 | 132C12 | 132C22<br>132C32 |
|-------|--------|--------|------------------|--------|--------|------------------|
| GFL07 | m [kg] | 96     |                  |        |        |                  |
| GFL09 | m [kg] | 153    | 162              |        |        |                  |
| GFL11 | m [kg] | 261    | 270              | 283    | 313    |                  |
| GFL14 | m [kg] | 444    | 452              | 465    |        | 495              |

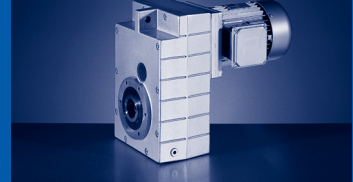
## GFL□□-3M VCR / VDR

|       |        | 063C32<br>063C42 | 071C32 | 071C42 | 080C32<br>080C42 |
|-------|--------|------------------|--------|--------|------------------|
| GFL05 | m [kg] | 26               | 28     |        |                  |
| GFL06 | m [kg] | 44               |        | 46     | 51               |
| GFL07 | m [kg] | 77               |        | 79     | 84               |
| GFL09 | m [kg] | 131              |        | 133    | 138              |
| GFL11 | m [kg] |                  |        |        | 239              |

|       |        | 090C32 | 100C12<br>100C32 | 112C22 | 132C12 | 132C22<br>132C32 |
|-------|--------|--------|------------------|--------|--------|------------------|
| GFL07 | m [kg] | 92     |                  |        |        |                  |
| GFL09 | m [kg] | 146    | 155              |        |        |                  |
| GFL11 | m [kg] | 247    | 256              | 269    | 299    |                  |
| GFL14 | m [kg] | 421    | 429              | 442    |        | 472              |

- Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).

4



### GFL□□-3M VAK

|       |   |      | 063C32<br>063C42 | 071C32 | 071C42 | 080C32<br>080C42 |
|-------|---|------|------------------|--------|--------|------------------|
| GFL05 | m | [kg] | 31               | 33     |        |                  |
| GFL06 | m | [kg] | 54               |        | 56     | 61               |
| GFL07 | m | [kg] | 92               |        | 94     | 99               |
| GFL09 | m | [kg] | 154              |        | 156    | 161              |
| GFL11 | m | [kg] |                  |        |        | 277              |

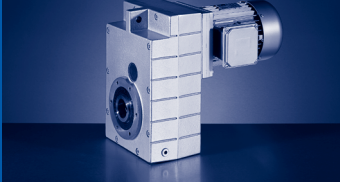
|       |   |      | 090C32 | 100C12<br>100C32 | 112C22 | 132C12 | 132C22<br>132C32 |
|-------|---|------|--------|------------------|--------|--------|------------------|
| GFL07 | m | [kg] | 107    |                  |        |        |                  |
| GFL09 | m | [kg] | 169    | 178              |        |        |                  |
| GFL11 | m | [kg] | 285    | 294              | 307    | 337    |                  |
| GFL14 | m | [kg] | 477    | 485              | 498    |        | 528              |

### GFL□□-3M VCK

|       |   |      | 063C32<br>063C42 | 071C32 | 071C42 | 080C32<br>080C42 |
|-------|---|------|------------------|--------|--------|------------------|
| GFL05 | m | [kg] | 30               | 32     |        |                  |
| GFL06 | m | [kg] | 51               |        | 53     | 58               |
| GFL07 | m | [kg] | 88               |        | 90     | 95               |
| GFL09 | m | [kg] | 147              |        | 149    | 154              |
| GFL11 | m | [kg] |                  |        |        | 263              |

|       |   |      | 090C32 | 100C12<br>100C32 | 112C22 | 132C12 | 132C22<br>132C32 |
|-------|---|------|--------|------------------|--------|--------|------------------|
| GFL07 | m | [kg] | 103    |                  |        |        |                  |
| GFL09 | m | [kg] | 162    | 171              |        |        |                  |
| GFL11 | m | [kg] | 271    | 280              | 293    | 323    |                  |
| GFL14 | m | [kg] | 454    | 462              | 475    |        | 505              |

- Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



# GFL

GFL [kg] - MF□MA

## GFL□□-3M SAR / SBR

|       |        | 063C32<br>063C42 | 071C32 | 071C42 | 080C32<br>080C42 |
|-------|--------|------------------|--------|--------|------------------|
| GFL05 | m [kg] | 27               | 29     |        |                  |
| GFL06 | m [kg] | 45               |        | 47     | 52               |
| GFL07 | m [kg] | 77               |        | 80     | 84               |
| GFL09 | m [kg] | 133              |        | 135    | 140              |
| GFL11 | m [kg] |                  |        |        | 242              |

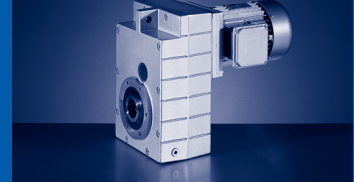
|       |        | 090C32 | 100C12<br>100C32 | 112C22 | 132C12 | 132C22<br>132C32 |
|-------|--------|--------|------------------|--------|--------|------------------|
| GFL07 | m [kg] | 92     |                  |        |        |                  |
| GFL09 | m [kg] | 148    | 157              |        |        |                  |
| GFL11 | m [kg] | 250    | 259              | 272    | 302    |                  |
| GFL14 | m [kg] | 422    | 430              | 443    |        | 473              |

## GFL□□-3M SCR / SDR

|       |        | 063C32<br>063C42 | 071C32 | 071C42 | 080C32<br>080C42 |
|-------|--------|------------------|--------|--------|------------------|
| GFL05 | m [kg] | 26               | 28     |        |                  |
| GFL06 | m [kg] | 43               |        | 45     | 50               |
| GFL07 | m [kg] | 73               |        | 76     | 80               |
| GFL09 | m [kg] | 126              |        | 128    | 133              |
| GFL11 | m [kg] |                  |        |        | 228              |

|       |        | 090C32 | 100C12<br>100C32 | 112C22 | 132C12 | 132C22<br>132C32 |
|-------|--------|--------|------------------|--------|--------|------------------|
| GFL07 | m [kg] | 88     |                  |        |        |                  |
| GFL09 | m [kg] | 141    | 150              |        |        |                  |
| GFL11 | m [kg] | 236    | 245              | 258    | 288    |                  |
| GFL14 | m [kg] | 399    | 407              | 420    |        | 450              |

- Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



### GFL□□-3M SAK

|       |   |      | 063C32<br>063C42 | 071C32 | 071C42 | 080C32<br>080C42 |
|-------|---|------|------------------|--------|--------|------------------|
| GFL05 | m | [kg] | 31               | 33     |        |                  |
| GFL06 | m | [kg] | 52               |        | 54     | 59               |
| GFL07 | m | [kg] | 88               |        | 91     | 95               |
| GFL09 | m | [kg] | 149              |        | 151    | 156              |
| GFL11 | m | [kg] |                  |        |        | 266              |

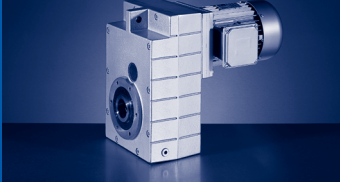
|       |   |      | 090C32 | 100C12<br>100C32 | 112C22 | 132C12 | 132C22<br>132C32 |
|-------|---|------|--------|------------------|--------|--------|------------------|
| GFL07 | m | [kg] | 103    |                  |        |        |                  |
| GFL09 | m | [kg] | 164    | 173              |        |        |                  |
| GFL11 | m | [kg] | 274    | 283              | 296    | 326    |                  |
| GFL14 | m | [kg] | 455    | 463              | 476    |        | 506              |

### GFL□□-3M SCK

|       |   |      | 063C32<br>063C42 | 071C32 | 071C42 | 080C32<br>080C42 |
|-------|---|------|------------------|--------|--------|------------------|
| GFL05 | m | [kg] | 30               | 32     |        |                  |
| GFL06 | m | [kg] | 50               |        | 52     | 57               |
| GFL07 | m | [kg] | 84               |        | 87     | 91               |
| GFL09 | m | [kg] | 142              |        | 144    | 149              |
| GFL11 | m | [kg] |                  |        |        | 252              |

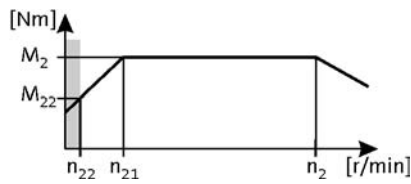
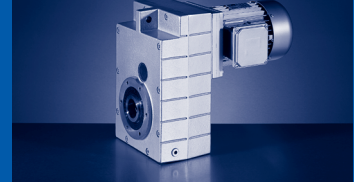
|       |   |      | 090C32 | 100C12<br>100C32 | 112C22 | 132C12 | 132C22<br>132C32 |
|-------|---|------|--------|------------------|--------|--------|------------------|
| GFL07 | m | [kg] | 99     |                  |        |        |                  |
| GFL09 | m | [kg] | 157    | 166              |        |        |                  |
| GFL11 | m | [kg] | 260    | 269              | 282    | 312    |                  |
| GFL14 | m | [kg] | 432    | 440              | 453    |        | 483              |

- Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



## GFL

GFL [kg] - MF□MA

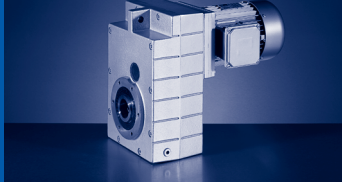


120 Hz:  $P_N = 0.55 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.3 \dots 3440 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i       |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|---------|-------------------|-----------------|-----|
| 22                  | 94                  | - | 538              | 7.2              | 10            | 3.9 | 6.400   | GFL05-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 20                  | 85                  | - | 490              | 7.9              | 10            | 4.5 | 7.025   | GFL04-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 14                  | 59                  | - | 336              | 12               | 15            | 4.5 | 10.238  | GFL04-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 9.8                 | 41                  | - | 234              | 17               | 22            | 4.5 | 14.706  | GFL04-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 9.0                 | 38                  | - | 216              | 18               | 24            | 3.9 | 15.904  | GFL05-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 8.0                 | 34                  | - | 192              | 20               | 27            | 3.9 | 17.920  | GFL05-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 7.0                 | 29                  | - | 168              | 23               | 30            | 4.1 | 20.519  | GFL04-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 6.3                 | 26                  | - | 151              | 26               | 34            | 3.7 | 22.857  | GFL04-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 5.7                 | 24                  | - | 137              | 28               | 37            | 4.2 | 25.136  | GFL04-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 5.1                 | 21                  | - | 123              | 31               | 42            | 3.5 | 28.000  | GFL04-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 4.5                 | 19                  | - | 109              | 35               | 47            | 3.4 | 31.600  | GFL04-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 4.1                 | 17                  | - | 98               | 40               | 52            | 2.8 | 35.200  | GFL04-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 3.5                 | 15                  | - | 85               | 46               | 60            | 2.7 | 40.697  | GFL04-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 3.2                 | 13                  | - | 76               | 51               | 67            | 2.2 | 45.333  | GFL04-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 2.8                 | 12                  | - | 67               | 58               | 76            | 2.1 | 51.579  | GFL04-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 2.8                 | 12                  | - | 66               | 58               | 77            | 3.2 | 52.067  | GFL05-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 2.5                 | 10                  | - | 60               | 64               | 85            | 1.8 | 57.455  | GFL04-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 2.4                 | 10                  | - | 59               | 66               | 87            | 3.2 | 58.667  | GFL05-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 2.3                 | 9.7                 | - | 56               | 68               | 90            | 2.0 | 61.653  | GFL05-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 2.3                 | 9.5                 | - | 54               | 71               | 94            | 2.6 | 63.190  | GFL05-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 2.2                 | 9.4                 | - | 54               | 72               | 95            | 3.1 | 64.080  | GFL06-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 2.2                 | 9.3                 | - | 53               | 73               | 96            | 1.2 | 64.636  | GFL04-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 2.0                 | 8.3                 | - | 48               | 81               | 107           | 1.3 | 72.000  | GFL04-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 2.0                 | 8.4                 | - | 48               | 80               | 106           | 2.8 | 71.200  | GFL05-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 1.8                 | 7.6                 | - | 44               | 87               | 115           | 1.9 | 78.639  | GFL05-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 1.8                 | 7.4                 | - | 43               | 91               | 120           | 1.5 | 80.763  | GFL05-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 1.8                 | 7.4                 | - | 43               | 91               | 120           | 2.8 | 81.000  | GFL06-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 1.6                 | 6.6                 | - | 38               | 102              | 135           | 1.5 | 91.000  | GFL05-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 1.6                 | 6.7                 | - | 38               | 100              | 132           | 2.2 | 90.123  | GFL05-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 1.6                 | 6.6                 | - | 38               | 102              | 135           | 2.8 | 91.250  | GFL06-2M□□□063C32 | E84AV□□□5514□□□ | 188 |
| 1.4                 | 5.9                 | - | 34               | 112              | 148           | 2.1 | 101.547 | GFL05-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 1.3                 | 5.2                 | - | 30               | 127              | 168           | 1.9 | 114.952 | GFL05-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 1.2                 | 5.2                 | - | 30               | 129              | 170           | 3.0 | 116.571 | GFL06-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 1.1                 | 4.6                 | - | 27               | 143              | 189           | 1.7 | 129.524 | GFL05-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 1.1                 | 4.6                 | - | 26               | 145              | 192           | 3.0 | 131.323 | GFL06-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 1.0                 | 4.3                 | - | 24               | 156              | 206           | 1.6 | 140.817 | GFL05-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 1.0                 | 4.2                 | - | 24               | 159              | 211           | 2.5 | 144.320 | GFL06-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.9                 | 3.8                 | - | 22               | 175              | 232           | 1.4 | 158.667 | GFL05-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.9                 | 3.7                 | - | 21               | 180              | 237           | 2.5 | 162.583 | GFL06-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.8                 | 3.4                 | - | 19               | 196              | 258           | 1.3 | 177.027 | GFL05-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.8                 | 3.3                 | - | 19               | 198              | 262           | 2.2 | 179.520 | GFL06-3M□□□063C32 | E84AV□□□5514□□□ | 196 |



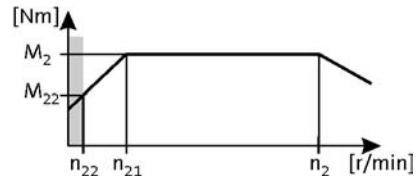
# GFL

GFL [Nm] - MF□MA

120 Hz:  $P_N = 0.55 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

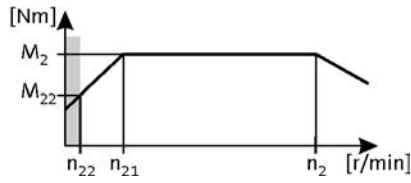
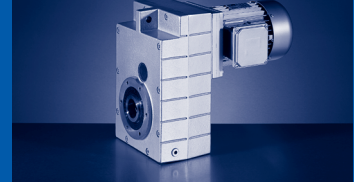
$n_1 = 143.3 \dots 3440 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | c   | i       |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 0.7      | 3.0      | - | 17      | 220      | 291   | 1.1 | 199.467 | GFL05-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.7      | 3.0      | - | 17      | 223      | 295   | 2.0 | 202.237 | GFL06-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.6      | 2.6      | - | 15      | 252      | 333   | 1.0 | 227.989 | GFL05-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.6      | 2.6      | - | 15      | 255      | 337   | 1.8 | 231.200 | GFL06-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.6      | 2.3      | - | 13      | 288      | 380   | 1.5 | 260.457 | GFL06-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.5      | 2.0      | - | 12      | 330      | 437   | 1.3 | 299.200 | GFL06-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.5      | 2.1      | - | 12      | 324      | 428   | 1.5 | 293.018 | GFL06-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.5      | 2.1      | - | 12      | 321      | 424   | 3.1 | 290.706 | GFL07-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.4      | 1.8      | - | 11      | 362      | 478   | 2.5 | 327.556 | GFL07-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.4      | 1.7      | - | 9.8     | 390      | 515   | 2.6 | 352.811 | GFL07-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.4      | 1.6      | - | 9.4     | 406      | 536   | 1.2 | 367.200 | GFL06-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.4      | 1.5      | - | 8.7     | 439      | 580   | 2.1 | 397.533 | GFL07-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.4      | 1.5      | - | 8.3     | 457      | 604   | 1.0 | 413.667 | GFL06-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.3      | 1.4      | - | 8.0     | 475      | 628   | 1.9 | 430.222 | GFL07-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.3      | 1.3      | - | 7.2     | 525      | 693   | 0.9 | 475.200 | GFL06-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.3      | 1.2      | - | 6.6     | 577      | 762   | 1.6 | 522.133 | GFL07-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.3      | 1.1      | - | 6.2     | 612      | 809   | 2.5 | 554.470 | GFL09-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.3      | 1.1      | - | 6.1     | 621      | 821   | 1.3 | 562.391 | GFL07-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.2      | 1.0      | - | 5.5     | 690      | 912   | 2.4 | 624.879 | GFL09-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.2      | 1.0      | - | 5.4     | 700      | 925   | 1.3 | 633.680 | GFL07-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.2      | 0.9      | - | 4.9     | 774      | 1023  | 2.0 | 700.875 | GFL09-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.2      | 0.8      | - | 4.8     | 794      | 1049  | 1.0 | 718.786 | GFL07-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.2      | 0.8      | - | 4.4     | 872      | 1153  | 1.9 | 789.875 | GFL09-3M□□□063C32 | E84AV□□□5514□□□ | 196 |
| 0.2      | 0.7      | - | 4.3     | 894      | 1182  | 1.0 | 809.900 | GFL07-3M□□□063C32 | E84AV□□□5514□□□ | 196 |

4



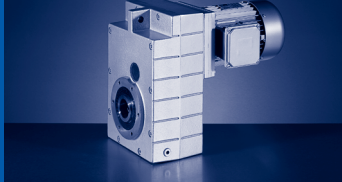


120 Hz:  $P_N = 0.75 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 141.7 \dots 3400 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i   |         |                   |                 |     |
|---------------------|---------------------|------------------|------------------|---------------|-----|-----|---------|-------------------|-----------------|-----|
| 22                  | 94                  | -                | 531              | 9.8           | 13  | 2.9 | 6.400   | GFL05-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 20                  | 85                  | -                | 484              | 11            | 14  | 3.3 | 7.025   | GFL04-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 14                  | 59                  | -                | 332              | 16            | 21  | 3.3 | 10.238  | GFL04-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 9.6                 | 41                  | -                | 231              | 23            | 30  | 3.3 | 14.706  | GFL04-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 8.9                 | 38                  | -                | 214              | 24            | 33  | 2.9 | 15.904  | GFL05-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 7.9                 | 34                  | -                | 190              | 27            | 37  | 2.9 | 17.920  | GFL05-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 6.9                 | 29                  | -                | 166              | 31            | 42  | 3.0 | 20.519  | GFL04-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 6.2                 | 26                  | -                | 149              | 35            | 47  | 2.7 | 22.857  | GFL04-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 5.6                 | 24                  | -                | 135              | 38            | 51  | 3.1 | 25.136  | GFL04-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 5.1                 | 21                  | -                | 121              | 43            | 57  | 2.5 | 28.000  | GFL04-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 4.5                 | 19                  | -                | 108              | 48            | 65  | 2.5 | 31.600  | GFL04-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 4.4                 | 19                  | -                | 105              | 49            | 66  | 3.1 | 32.344  | GFL05-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 4.0                 | 17                  | -                | 97               | 54            | 72  | 2.0 | 35.200  | GFL04-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 3.9                 | 17                  | -                | 93               | 56            | 75  | 3.1 | 36.444  | GFL05-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 3.5                 | 15                  | -                | 85               | 62            | 82  | 2.6 | 40.233  | GFL05-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 3.5                 | 15                  | -                | 84               | 62            | 83  | 1.9 | 40.697  | GFL04-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 3.1                 | 13                  | -                | 75               | 69            | 93  | 1.6 | 45.333  | GFL04-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 3.1                 | 13                  | -                | 75               | 69            | 93  | 2.6 | 45.333  | GFL05-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 2.8                 | 12                  | -                | 66               | 79            | 105 | 1.6 | 51.579  | GFL04-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 2.7                 | 12                  | -                | 65               | 80            | 106 | 2.3 | 52.067  | GFL05-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 2.7                 | 11                  | -                | 64               | 81            | 108 | 2.6 | 52.800  | GFL06-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 2.5                 | 10                  | -                | 59               | 88            | 117 | 1.3 | 57.455  | GFL04-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 2.4                 | 10                  | -                | 58               | 90            | 120 | 2.3 | 58.667  | GFL05-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 2.4                 | 10                  | -                | 57               | 91            | 122 | 2.6 | 59.481  | GFL06-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 2.3                 | 9.7                 | -                | 55               | 93            | 124 | 1.4 | 61.653  | GFL05-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 2.2                 | 9.5                 | -                | 54               | 97            | 129 | 1.9 | 63.190  | GFL05-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 2.2                 | 9.4                 | -                | 53               | 98            | 131 | 2.3 | 64.080  | GFL06-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 2.0                 | 8.4                 | -                | 48               | 109           | 146 | 2.0 | 71.200  | GFL05-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 2.0                 | 8.3                 | -                | 47               | 110           | 147 | 1.0 | 72.000  | GFL04-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 2.0                 | 8.3                 | -                | 47               | 110           | 148 | 2.5 | 72.189  | GFL06-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 1.8                 | 7.6                 | -                | 43               | 118           | 158 | 1.4 | 78.639  | GFL05-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 1.8                 | 7.4                 | -                | 42               | 124           | 165 | 1.1 | 80.763  | GFL05-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 1.8                 | 7.4                 | -                | 42               | 124           | 166 | 2.0 | 81.000  | GFL06-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 1.8                 | 7.4                 | -                | 42               | 122           | 163 | 2.9 | 81.111  | GFL06-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 1.6                 | 6.8                 | -                | 39               | 133           | 178 | 2.6 | 88.200  | GFL06-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 1.6                 | 6.7                 | -                | 38               | 136           | 181 | 1.6 | 90.123  | GFL05-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 1.6                 | 6.6                 | -                | 37               | 139           | 186 | 1.1 | 91.000  | GFL05-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 1.6                 | 6.6                 | -                | 37               | 140           | 187 | 2.0 | 91.250  | GFL06-2M□□□063C42 | E84AV□□□7514□□□ | 188 |
| 1.4                 | 5.9                 | -                | 34               | 153           | 204 | 1.5 | 101.547 | GFL05-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 1.4                 | 6.0                 | -                | 34               | 150           | 200 | 2.6 | 99.361  | GFL06-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 1.2                 | 5.2                 | -                | 30               | 173           | 231 | 1.4 | 114.952 | GFL05-3M□□□063C42 | E84AV□□□7514□□□ | 196 |



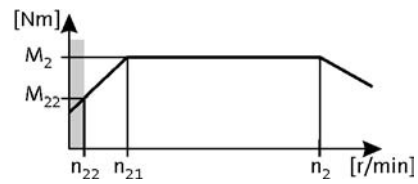
# GFL

GFL [Nm] - MF□MA

120 Hz:  $P_N = 0.75 \text{ kW}$

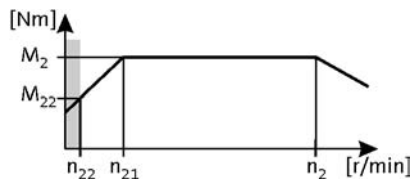
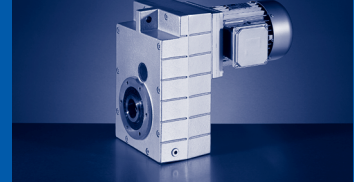
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 141.7 \dots 3400 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 1.2      | 5.2      | - | 29      | 176      | 235   | 2.2 | 116.571 | GFL06-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 1.1      | 4.6      | - | 26      | 195      | 261   | 1.2 | 129.524 | GFL05-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 1.1      | 4.6      | - | 26      | 198      | 264   | 2.2 | 131.323 | GFL06-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 1.0      | 4.3      | - | 24      | 212      | 284   | 1.2 | 140.817 | GFL05-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 1.0      | 4.2      | - | 24      | 217      | 291   | 1.8 | 144.320 | GFL06-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.9      | 3.8      | - | 21      | 239      | 319   | 1.0 | 158.667 | GFL05-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.9      | 3.7      | - | 21      | 245      | 327   | 1.8 | 162.583 | GFL06-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.8      | 3.4      | - | 19      | 267      | 356   | 0.9 | 177.027 | GFL05-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.8      | 3.3      | - | 19      | 270      | 361   | 1.6 | 179.520 | GFL06-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.8      | 3.3      | - | 19      | 276      | 369   | 2.9 | 183.285 | GFL07-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.7      | 3.0      | - | 17      | 305      | 407   | 1.4 | 202.237 | GFL06-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.7      | 2.9      | - | 17      | 311      | 416   | 2.9 | 206.519 | GFL07-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.6      | 2.6      | - | 15      | 348      | 465   | 1.3 | 231.200 | GFL06-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.6      | 2.7      | - | 15      | 338      | 452   | 2.8 | 224.636 | GFL07-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.5      | 2.3      | - | 13      | 392      | 524   | 1.1 | 260.457 | GFL06-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.6      | 2.4      | - | 13      | 381      | 510   | 2.4 | 253.111 | GFL07-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.5      | 2.1      | - | 12      | 441      | 590   | 1.1 | 293.018 | GFL06-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.5      | 2.1      | - | 12      | 438      | 585   | 2.3 | 290.706 | GFL07-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.5      | 2.1      | - | 12      | 438      | 586   | 2.9 | 290.889 | GFL09-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.5      | 2.0      | - | 11      | 451      | 602   | 1.0 | 299.200 | GFL06-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.4      | 1.8      | - | 10      | 493      | 659   | 1.8 | 327.556 | GFL07-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.4      | 1.8      | - | 10      | 494      | 660   | 2.9 | 327.827 | GFL09-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.4      | 1.7      | - | 9.6     | 531      | 710   | 1.9 | 352.811 | GFL07-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.4      | 1.7      | - | 9.6     | 532      | 711   | 2.5 | 353.033 | GFL09-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.4      | 1.5      | - | 8.6     | 599      | 800   | 1.5 | 397.533 | GFL07-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.4      | 1.5      | - | 8.6     | 599      | 801   | 2.5 | 397.863 | GFL09-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.3      | 1.4      | - | 8.0     | 639      | 854   | 2.9 | 424.247 | GFL09-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.3      | 1.4      | - | 7.9     | 648      | 866   | 1.4 | 430.222 | GFL07-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.3      | 1.2      | - | 6.6     | 775      | 1037  | 2.5 | 514.881 | GFL09-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.3      | 1.2      | - | 6.5     | 786      | 1051  | 1.2 | 522.133 | GFL07-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.3      | 1.1      | - | 6.1     | 847      | 1132  | 1.0 | 562.391 | GFL07-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.3      | 1.1      | - | 6.1     | 835      | 1116  | 1.8 | 554.470 | GFL09-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.2      | 1.0      | - | 5.4     | 954      | 1276  | 0.9 | 633.680 | GFL07-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.2      | 1.0      | - | 5.4     | 941      | 1258  | 1.7 | 624.879 | GFL09-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.2      | 0.9      | - | 4.9     | 1055     | 1411  | 1.4 | 700.875 | GFL09-3M□□□063C42 | E84AV□□□7514□□□ | 196 |
| 0.2      | 0.8      | - | 4.3     | 1190     | 1590  | 1.4 | 789.875 | GFL09-3M□□□063C42 | E84AV□□□7514□□□ | 196 |

4

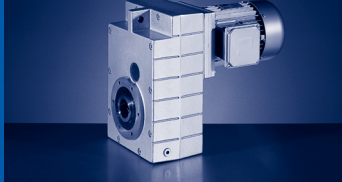


120 Hz:  $P_N = 1.10 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.4 \dots 3490 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i   |         |                   |                 |     |
|---------------------|---------------------|------------------|------------------|---------------|-----|-----|---------|-------------------|-----------------|-----|
| 23                  | 93                  | -                | 543              | 14            | 19  | 3.9 | 6.422   | GFL04-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 21                  | 85                  | -                | 497              | 16            | 21  | 3.9 | 7.025   | GFL04-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 16                  | 67                  | -                | 387              | 20            | 26  | 4.2 | 9.010   | GFL05-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 14                  | 59                  | -                | 341              | 23            | 30  | 3.9 | 10.238  | GFL04-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 9.9                 | 41                  | -                | 237              | 33            | 43  | 3.2 | 14.706  | GFL04-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 9.0                 | 37                  | -                | 217              | 36            | 47  | 2.9 | 16.087  | GFL04-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 8.1                 | 34                  | -                | 195              | 40            | 52  | 2.4 | 17.920  | GFL04-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 7.1                 | 29                  | -                | 170              | 46            | 60  | 2.3 | 20.519  | GFL04-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 6.4                 | 26                  | -                | 153              | 51            | 67  | 1.9 | 22.857  | GFL04-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 5.8                 | 24                  | -                | 139              | 56            | 73  | 2.1 | 25.136  | GFL04-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 5.2                 | 21                  | -                | 125              | 63            | 82  | 1.8 | 28.000  | GFL04-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 4.6                 | 19                  | -                | 110              | 71            | 92  | 1.7 | 31.600  | GFL04-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 4.5                 | 19                  | -                | 108              | 73            | 95  | 3.1 | 32.344  | GFL05-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 4.1                 | 17                  | -                | 99               | 79            | 103 | 1.4 | 35.200  | GFL04-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 4.0                 | 17                  | -                | 96               | 82            | 106 | 2.5 | 36.444  | GFL05-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 3.6                 | 15                  | -                | 87               | 90            | 118 | 2.5 | 40.233  | GFL05-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 3.6                 | 15                  | -                | 86               | 91            | 119 | 1.3 | 40.697  | GFL04-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 3.2                 | 13                  | -                | 77               | 102           | 132 | 1.1 | 45.333  | GFL04-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 3.2                 | 13                  | -                | 77               | 102           | 132 | 2.1 | 45.333  | GFL05-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 2.8                 | 12                  | -                | 67               | 117           | 152 | 1.7 | 52.067  | GFL05-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 2.8                 | 11                  | -                | 66               | 118           | 154 | 3.1 | 52.800  | GFL06-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 2.5                 | 10                  | -                | 60               | 132           | 171 | 1.6 | 58.667  | GFL05-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 2.4                 | 10                  | -                | 59               | 133           | 174 | 3.0 | 59.481  | GFL06-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 2.4                 | 9.7                 | -                | 57               | 136           | 177 | 1.0 | 61.653  | GFL05-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 2.3                 | 9.5                 | -                | 55               | 142           | 185 | 1.3 | 63.190  | GFL05-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 2.3                 | 9.4                 | -                | 55               | 144           | 187 | 2.5 | 64.080  | GFL06-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 2.2                 | 9.1                 | -                | 53               | 146           | 191 | 2.5 | 66.213  | GFL06-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 2.0                 | 8.4                 | -                | 49               | 160           | 208 | 1.4 | 71.200  | GFL05-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 2.0                 | 8.3                 | -                | 49               | 159           | 207 | 2.3 | 72.000  | GFL06-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 2.0                 | 8.3                 | -                | 48               | 162           | 211 | 2.8 | 72.189  | GFL06-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 1.9                 | 7.6                 | -                | 44               | 174           | 226 | 0.9 | 78.639  | GFL05-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 1.8                 | 7.4                 | -                | 43               | 182           | 237 | 1.6 | 81.000  | GFL06-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 1.8                 | 7.4                 | -                | 43               | 179           | 233 | 2.0 | 81.111  | GFL06-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 1.7                 | 6.8                 | -                | 40               | 195           | 254 | 1.8 | 88.200  | GFL06-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 1.6                 | 6.7                 | -                | 39               | 199           | 259 | 1.1 | 90.123  | GFL05-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 1.6                 | 6.6                 | -                | 38               | 205           | 267 | 1.6 | 91.250  | GFL06-2M□□□071C32 | E84AV□□□1124□□□ | 188 |
| 1.5                 | 6.0                 | -                | 35               | 220           | 286 | 1.8 | 99.361  | GFL06-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 1.4                 | 5.9                 | -                | 34               | 224           | 292 | 1.1 | 101.547 | GFL05-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 1.3                 | 5.3                 | -                | 31               | 250           | 326 | 3.0 | 113.206 | GFL07-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 1.3                 | 5.2                 | -                | 30               | 254           | 331 | 0.9 | 114.952 | GFL05-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 1.3                 | 5.2                 | -                | 30               | 258           | 335 | 1.5 | 116.571 | GFL06-3M□□□071C32 | E84AV□□□1124□□□ | 196 |



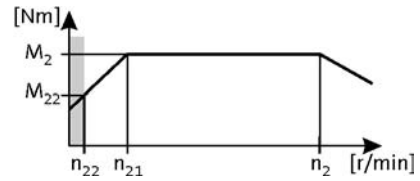
# GFL

GFL [Nm] - MF□MA

120 Hz:  $P_N = 1.10 \text{ kW}$

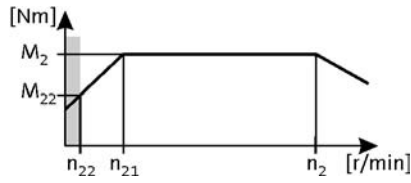
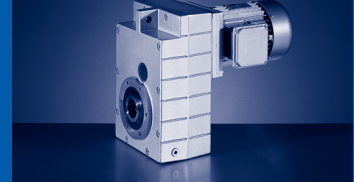
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.4 \dots 3490 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 1.1      | 4.6      | - | 27      | 290      | 378   | 1.5 | 131.323 | GFL06-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 1.1      | 4.7      | - | 27      | 282      | 367   | 3.0 | 127.556 | GFL07-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 1.0      | 4.2      | - | 24      | 319      | 415   | 1.3 | 144.320 | GFL06-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 1.0      | 4.1      | - | 24      | 325      | 424   | 2.6 | 147.347 | GFL07-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.9      | 3.7      | - | 22      | 359      | 468   | 1.2 | 162.583 | GFL06-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.9      | 3.6      | - | 21      | 367      | 478   | 2.5 | 166.025 | GFL07-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.8      | 3.3      | - | 19      | 397      | 516   | 1.1 | 179.520 | GFL06-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.8      | 3.3      | - | 19      | 405      | 527   | 2.2 | 183.285 | GFL07-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.7      | 3.0      | - | 17      | 447      | 582   | 1.0 | 202.237 | GFL06-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.7      | 2.9      | - | 17      | 456      | 594   | 2.0 | 206.519 | GFL07-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.7      | 2.7      | - | 16      | 496      | 646   | 2.0 | 224.636 | GFL07-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.6      | 2.6      | - | 15      | 511      | 665   | 0.9 | 231.200 | GFL06-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.6      | 2.4      | - | 14      | 559      | 728   | 1.6 | 253.111 | GFL07-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.5      | 2.1      | - | 12      | 642      | 836   | 1.6 | 290.706 | GFL07-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.5      | 2.1      | - | 12      | 643      | 837   | 3.0 | 290.889 | GFL09-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.4      | 1.8      | - | 11      | 724      | 942   | 1.3 | 327.556 | GFL07-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.4      | 1.8      | - | 11      | 724      | 943   | 3.0 | 327.827 | GFL09-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.4      | 1.7      | - | 9.9     | 779      | 1015  | 1.3 | 352.811 | GFL07-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.4      | 1.7      | - | 9.9     | 780      | 1016  | 2.6 | 353.033 | GFL09-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.4      | 1.5      | - | 8.8     | 878      | 1144  | 1.0 | 397.533 | GFL07-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.4      | 1.5      | - | 8.8     | 879      | 1144  | 2.6 | 397.863 | GFL09-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.3      | 1.4      | - | 8.2     | 937      | 1220  | 2.1 | 424.247 | GFL09-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.3      | 1.4      | - | 8.1     | 950      | 1238  | 1.0 | 430.222 | GFL07-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.3      | 1.2      | - | 6.8     | 1137     | 1481  | 1.7 | 514.881 | GFL09-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.3      | 1.1      | - | 6.3     | 1225     | 1595  | 1.3 | 554.470 | GFL09-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.2      | 1.0      | - | 5.6     | 1380     | 1797  | 1.2 | 624.879 | GFL09-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.2      | 0.9      | - | 5.0     | 1548     | 2016  | 1.0 | 700.875 | GFL09-3M□□□071C32 | E84AV□□□1124□□□ | 196 |
| 0.2      | 0.8      | - | 4.4     | 1745     | 2272  | 1.0 | 789.875 | GFL09-3M□□□071C32 | E84AV□□□1124□□□ | 196 |

4

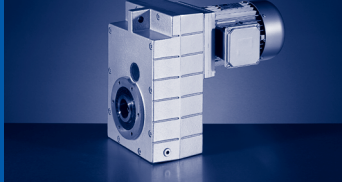


120 Hz:  $P_N = 1.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.8 \dots 3450 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 23       | 94       | - | 539     | 20       | 26    | 3.1 | 6.400  | GFL05-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 22       | 93       | - | 537     | 20       | 26    | 2.9 | 6.422  | GFL04-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 21       | 85       | - | 491     | 22       | 28    | 2.8 | 7.025  | GFL04-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 16       | 67       | - | 383     | 28       | 36    | 3.1 | 9.010  | GFL05-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 15       | 60       | - | 347     | 30       | 40    | 3.1 | 9.946  | GFL05-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 14       | 59       | - | 337     | 31       | 41    | 2.9 | 10.238 | GFL04-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 9.9      | 41       | - | 237     | 45       | 59    | 3.1 | 14.538 | GFL05-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 9.8      | 41       | - | 235     | 45       | 59    | 2.3 | 14.706 | GFL04-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 9.0      | 38       | - | 217     | 49       | 64    | 3.1 | 15.904 | GFL05-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 8.9      | 37       | - | 215     | 49       | 65    | 2.1 | 16.087 | GFL04-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 8.0      | 34       | - | 193     | 55       | 72    | 1.8 | 17.920 | GFL04-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 8.0      | 34       | - | 193     | 55       | 72    | 3.1 | 17.920 | GFL05-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 7.1      | 30       | - | 170     | 62       | 82    | 2.9 | 20.286 | GFL05-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 7.0      | 29       | - | 168     | 63       | 83    | 1.7 | 20.519 | GFL04-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 7.0      | 29       | - | 168     | 63       | 83    | 3.1 | 20.571 | GFL06-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 6.3      | 26       | - | 151     | 70       | 92    | 1.4 | 22.857 | GFL04-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 6.3      | 26       | - | 151     | 70       | 92    | 2.6 | 22.857 | GFL05-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 6.2      | 26       | - | 149     | 71       | 93    | 3.1 | 23.175 | GFL06-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 5.8      | 24       | - | 139     | 76       | 100   | 2.9 | 24.850 | GFL05-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 5.7      | 24       | - | 137     | 77       | 101   | 1.6 | 25.136 | GFL04-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 5.1      | 21       | - | 123     | 86       | 113   | 1.3 | 28.000 | GFL04-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 5.1      | 21       | - | 123     | 86       | 113   | 2.4 | 28.000 | GFL05-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 4.6      | 19       | - | 109     | 97       | 127   | 1.3 | 31.600 | GFL04-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 4.4      | 19       | - | 107     | 99       | 130   | 2.3 | 32.344 | GFL05-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 4.4      | 18       | - | 105     | 100      | 132   | 2.9 | 32.800 | GFL06-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 4.1      | 17       | - | 98      | 108      | 142   | 1.0 | 35.200 | GFL04-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 3.9      | 17       | - | 95      | 111      | 147   | 1.9 | 36.444 | GFL05-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 3.9      | 16       | - | 93      | 113      | 149   | 2.9 | 36.951 | GFL06-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 3.6      | 15       | - | 86      | 123      | 162   | 1.8 | 40.233 | GFL05-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 3.5      | 15       | - | 85      | 124      | 164   | 1.0 | 40.697 | GFL04-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 3.5      | 15       | - | 85      | 125      | 164   | 2.4 | 40.800 | GFL06-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 3.2      | 13       | - | 76      | 139      | 183   | 1.5 | 45.333 | GFL05-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 3.1      | 13       | - | 75      | 141      | 185   | 2.4 | 45.963 | GFL06-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 2.8      | 12       | - | 66      | 159      | 210   | 1.3 | 52.067 | GFL05-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 2.7      | 11       | - | 65      | 161      | 213   | 2.2 | 52.800 | GFL06-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 2.5      | 10       | - | 59      | 179      | 236   | 1.2 | 58.667 | GFL05-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 2.4      | 10       | - | 58      | 182      | 240   | 2.2 | 59.481 | GFL06-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 2.3      | 9.5      | - | 55      | 193      | 255   | 1.0 | 63.190 | GFL05-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 2.2      | 9.4      | - | 54      | 196      | 258   | 1.8 | 64.080 | GFL06-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 2.2      | 9.1      | - | 52      | 199      | 263   | 1.8 | 66.213 | GFL06-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 2.0      | 8.4      | - | 49      | 218      | 287   | 1.0 | 71.200 | GFL05-2M□□□071C42 | E84AV□□□1524□□□ | 188 |



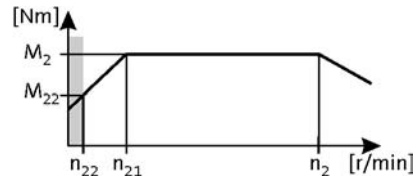
# GFL

GFL [Nm] - MF□MA

120 Hz:  $P_N = 1.50 \text{ kW}$

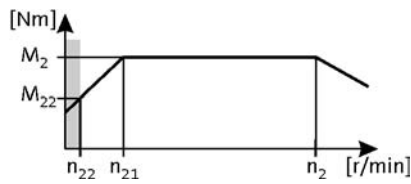
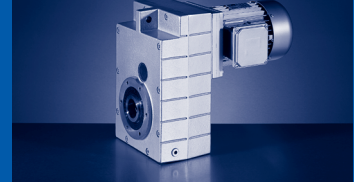
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.8 \dots 3450 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 2.0      | 8.3      | - | 48      | 217      | 286   | 1.7 | 72.000  | GFL06-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 2.0      | 8.3      | - | 48      | 221      | 291   | 2.0 | 72.189  | GFL06-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 2.0      | 8.3      | - | 48      | 218      | 288   | 2.9 | 72.452  | GFL07-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 1.8      | 7.4      | - | 43      | 248      | 326   | 1.2 | 81.000  | GFL06-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 1.8      | 7.4      | - | 43      | 244      | 322   | 1.5 | 81.111  | GFL06-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 1.8      | 7.4      | - | 42      | 246      | 324   | 2.9 | 81.636  | GFL07-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 1.6      | 6.8      | - | 39      | 266      | 350   | 1.3 | 88.200  | GFL06-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 1.6      | 6.6      | - | 38      | 279      | 368   | 1.2 | 91.250  | GFL06-2M□□□071C42 | E84AV□□□1524□□□ | 188 |
| 1.6      | 6.5      | - | 37      | 278      | 367   | 2.5 | 92.413  | GFL07-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 1.5      | 6.0      | - | 35      | 299      | 394   | 1.3 | 99.361  | GFL06-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 1.4      | 5.8      | - | 33      | 314      | 413   | 2.5 | 104.127 | GFL07-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 1.3      | 5.3      | - | 31      | 341      | 449   | 2.2 | 113.206 | GFL07-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 1.2      | 5.2      | - | 30      | 351      | 463   | 1.1 | 116.571 | GFL06-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 1.1      | 4.7      | - | 27      | 384      | 506   | 2.2 | 127.556 | GFL07-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 1.1      | 4.6      | - | 26      | 396      | 521   | 1.1 | 131.323 | GFL06-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 1.0      | 4.2      | - | 24      | 435      | 573   | 0.9 | 144.320 | GFL06-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 1.0      | 4.1      | - | 23      | 444      | 585   | 1.9 | 147.347 | GFL07-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 1.0      | 4.0      | - | 23      | 448      | 591   | 3.2 | 148.815 | GFL09-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.9      | 3.7      | - | 21      | 490      | 645   | 0.9 | 162.583 | GFL06-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.9      | 3.6      | - | 21      | 500      | 659   | 1.8 | 166.025 | GFL07-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.9      | 3.6      | - | 21      | 505      | 666   | 3.2 | 167.712 | GFL09-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.8      | 3.3      | - | 19      | 552      | 727   | 1.6 | 183.285 | GFL07-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.8      | 3.2      | - | 19      | 558      | 735   | 2.7 | 185.111 | GFL09-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.7      | 2.9      | - | 17      | 622      | 819   | 1.5 | 206.519 | GFL07-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.7      | 2.9      | - | 17      | 628      | 828   | 2.7 | 208.617 | GFL09-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.6      | 2.7      | - | 15      | 677      | 891   | 1.4 | 224.636 | GFL07-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.6      | 2.7      | - | 15      | 677      | 892   | 2.6 | 224.778 | GFL09-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.6      | 2.4      | - | 14      | 762      | 1004  | 1.2 | 253.111 | GFL07-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.6      | 2.4      | - | 14      | 763      | 1005  | 2.6 | 253.321 | GFL09-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.5      | 2.1      | - | 12      | 876      | 1154  | 1.1 | 290.706 | GFL07-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.5      | 2.1      | - | 12      | 876      | 1154  | 2.2 | 290.889 | GFL09-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.4      | 1.8      | - | 11      | 987      | 1300  | 0.9 | 327.556 | GFL07-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.4      | 1.8      | - | 11      | 987      | 1301  | 2.2 | 327.827 | GFL09-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.4      | 1.7      | - | 9.8     | 1063     | 1400  | 0.9 | 352.811 | GFL07-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.4      | 1.7      | - | 9.8     | 1063     | 1401  | 1.9 | 353.033 | GFL09-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.4      | 1.5      | - | 8.7     | 1198     | 1579  | 1.9 | 397.863 | GFL09-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.3      | 1.4      | - | 8.1     | 1278     | 1683  | 1.5 | 424.247 | GFL09-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.3      | 1.2      | - | 6.7     | 1551     | 2043  | 1.3 | 514.881 | GFL09-3M□□□071C42 | E84AV□□□1524□□□ | 196 |
| 0.3      | 1.1      | - | 6.2     | 1670     | 2200  | 0.9 | 554.470 | GFL09-3M□□□071C42 | E84AV□□□1524□□□ | 196 |

4

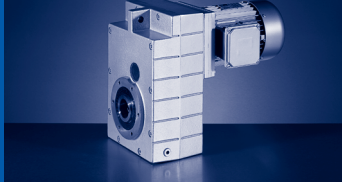


120 Hz:  $P_N = 2.20 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.8 \dots 3500 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i   |        |                   |                 |     |
|---------------------|---------------------|------------------|------------------|---------------|-----|-----|--------|-------------------|-----------------|-----|
| 23                  | 93                  | -                | 545              | 28            | 37  | 2.3 | 6.422  | GFL04-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 21                  | 85                  | -                | 498              | 31            | 41  | 2.1 | 7.025  | GFL04-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 16                  | 67                  | -                | 389              | 39            | 53  | 3.8 | 9.010  | GFL05-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 14                  | 59                  | -                | 342              | 45            | 60  | 2.0 | 10.238 | GFL04-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 10                  | 41                  | -                | 241              | 64            | 85  | 2.7 | 14.538 | GFL05-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 9.9                 | 41                  | -                | 238              | 64            | 86  | 1.6 | 14.706 | GFL04-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 9.2                 | 38                  | -                | 220              | 69            | 93  | 2.5 | 15.904 | GFL05-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 9.1                 | 37                  | -                | 218              | 70            | 94  | 1.5 | 16.087 | GFL04-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 8.1                 | 34                  | -                | 195              | 78            | 104 | 1.2 | 17.920 | GFL04-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 8.1                 | 34                  | -                | 195              | 78            | 104 | 2.3 | 17.920 | GFL05-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 7.2                 | 30                  | -                | 173              | 89            | 118 | 2.1 | 20.286 | GFL05-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 7.1                 | 29                  | -                | 171              | 90            | 120 | 1.2 | 20.519 | GFL04-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 6.4                 | 26                  | -                | 153              | 100           | 133 | 0.9 | 22.857 | GFL04-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 6.4                 | 26                  | -                | 153              | 100           | 133 | 1.8 | 22.857 | GFL05-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 5.9                 | 24                  | -                | 141              | 109           | 145 | 2.0 | 24.850 | GFL05-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 5.8                 | 24                  | -                | 139              | 110           | 146 | 1.1 | 25.136 | GFL04-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 5.2                 | 21                  | -                | 125              | 122           | 163 | 1.6 | 28.000 | GFL05-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 5.1                 | 21                  | -                | 123              | 124           | 165 | 3.1 | 28.389 | GFL06-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 4.5                 | 19                  | -                | 108              | 141           | 188 | 1.6 | 32.344 | GFL05-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 4.5                 | 18                  | -                | 107              | 143           | 191 | 2.9 | 32.800 | GFL06-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 4.0                 | 17                  | -                | 96               | 159           | 212 | 1.3 | 36.444 | GFL05-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 4.0                 | 16                  | -                | 95               | 161           | 215 | 2.4 | 36.951 | GFL06-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 3.6                 | 15                  | -                | 87               | 176           | 234 | 1.3 | 40.233 | GFL05-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 3.6                 | 15                  | -                | 86               | 178           | 238 | 2.4 | 40.800 | GFL06-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 3.2                 | 13                  | -                | 77               | 198           | 264 | 1.0 | 45.333 | GFL05-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 3.2                 | 13                  | -                | 76               | 201           | 268 | 2.0 | 45.963 | GFL06-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 2.8                 | 12                  | -                | 67               | 227           | 303 | 3.1 | 52.067 | GFL07-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 2.8                 | 11                  | -                | 66               | 231           | 308 | 1.8 | 52.800 | GFL06-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 2.5                 | 10                  | -                | 60               | 256           | 342 | 3.1 | 58.667 | GFL07-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 2.5                 | 10                  | -                | 59               | 260           | 346 | 1.5 | 59.481 | GFL06-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 2.3                 | 9.4                 | -                | 55               | 280           | 373 | 1.3 | 64.080 | GFL06-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 2.3                 | 9.5                 | -                | 55               | 276           | 368 | 2.4 | 63.190 | GFL07-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 2.2                 | 9.2                 | -                | 54               | 281           | 375 | 2.2 | 65.306 | GFL07-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 2.2                 | 9.1                 | -                | 53               | 285           | 380 | 1.2 | 66.213 | GFL06-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 2.0                 | 8.3                 | -                | 49               | 310           | 413 | 1.1 | 72.000 | GFL06-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 2.0                 | 8.3                 | -                | 49               | 315           | 420 | 1.4 | 72.189 | GFL06-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 2.1                 | 8.4                 | -                | 49               | 311           | 415 | 2.7 | 71.200 | GFL07-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 2.0                 | 8.3                 | -                | 48               | 312           | 416 | 2.0 | 72.452 | GFL07-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 1.8                 | 7.5                 | -                | 44               | 349           | 465 | 1.6 | 79.875 | GFL07-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 1.8                 | 7.4                 | -                | 43               | 349           | 465 | 1.0 | 81.111 | GFL06-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 1.8                 | 7.4                 | -                | 43               | 351           | 468 | 2.0 | 81.636 | GFL07-3M□□□080C32 | E84AV□□□2224□□□ | 196 |



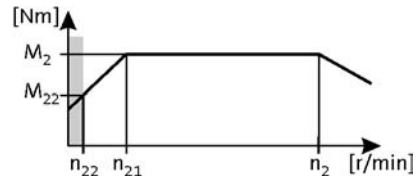
# GFL

## GFL [Nm] - MF□MA

120 Hz:  $P_N = 2.20 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

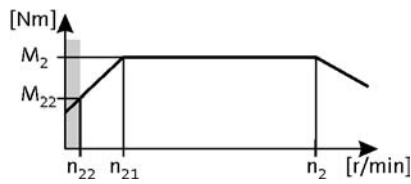
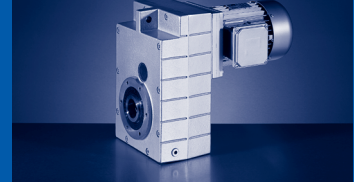
$n_1 = 145.8 \dots 3500 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 1.7      | 6.8      | - | 40      | 379      | 506   | 0.9 | 88.200  | GFL06-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 1.6      | 6.7      | - | 39      | 393      | 524   | 1.6 | 90.000  | GFL07-2M□□□080C32 | E84AV□□□2224□□□ | 188 |
| 1.6      | 6.5      | - | 38      | 397      | 530   | 1.7 | 92.413  | GFL07-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 1.6      | 6.4      | - | 38      | 401      | 535   | 3.0 | 93.333  | GFL09-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 1.5      | 6.0      | - | 35      | 427      | 570   | 0.9 | 99.361  | GFL06-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 1.4      | 5.8      | - | 34      | 448      | 597   | 1.7 | 104.127 | GFL07-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 1.4      | 5.7      | - | 33      | 452      | 603   | 3.0 | 105.185 | GFL09-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 1.3      | 5.3      | - | 31      | 487      | 649   | 1.5 | 113.206 | GFL07-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 1.3      | 5.3      | - | 31      | 492      | 656   | 2.7 | 114.333 | GFL09-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 1.1      | 4.7      | - | 27      | 549      | 732   | 1.5 | 127.556 | GFL07-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 1.1      | 4.7      | - | 27      | 554      | 739   | 2.7 | 128.852 | GFL09-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 1.0      | 4.1      | - | 24      | 634      | 845   | 1.3 | 147.347 | GFL07-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 1.0      | 4.0      | - | 24      | 640      | 854   | 2.3 | 148.815 | GFL09-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.9      | 3.6      | - | 21      | 714      | 952   | 1.2 | 166.025 | GFL07-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.9      | 3.6      | - | 21      | 721      | 962   | 2.3 | 167.712 | GFL09-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.8      | 3.3      | - | 19      | 788      | 1052  | 1.1 | 183.285 | GFL07-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.8      | 3.2      | - | 19      | 796      | 1062  | 2.0 | 185.111 | GFL09-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.7      | 2.9      | - | 17      | 888      | 1185  | 1.0 | 206.519 | GFL07-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.7      | 2.9      | - | 17      | 897      | 1197  | 2.0 | 208.617 | GFL09-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.7      | 2.7      | - | 16      | 966      | 1289  | 1.0 | 224.636 | GFL07-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.7      | 2.7      | - | 16      | 967      | 1290  | 1.8 | 224.778 | GFL09-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.6      | 2.4      | - | 14      | 1089     | 1453  | 1.8 | 253.321 | GFL09-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.6      | 2.3      | - | 13      | 1149     | 1533  | 3.2 | 267.259 | GFL11-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.5      | 2.1      | - | 12      | 1251     | 1669  | 1.5 | 290.889 | GFL09-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.4      | 1.8      | - | 11      | 1410     | 1881  | 1.5 | 327.827 | GFL09-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.5      | 1.8      | - | 11      | 1409     | 1879  | 2.8 | 327.556 | GFL11-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.4      | 1.7      | - | 9.9     | 1518     | 2025  | 1.3 | 353.033 | GFL09-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.4      | 1.7      | - | 9.8     | 1540     | 2054  | 2.4 | 358.077 | GFL11-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.4      | 1.5      | - | 8.8     | 1711     | 2282  | 1.3 | 397.863 | GFL09-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.4      | 1.5      | - | 8.7     | 1735     | 2315  | 2.4 | 403.467 | GFL11-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.3      | 1.4      | - | 8.3     | 1825     | 2434  | 1.1 | 424.247 | GFL09-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.3      | 1.4      | - | 8.1     | 1850     | 2468  | 2.3 | 430.222 | GFL11-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.3      | 1.2      | - | 6.7     | 2245     | 2995  | 1.9 | 522.133 | GFL11-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.3      | 1.1      | - | 6.2     | 2419     | 3226  | 1.6 | 562.391 | GFL11-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.2      | 1.0      | - | 5.5     | 2725     | 3635  | 1.5 | 633.680 | GFL11-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.2      | 0.8      | - | 4.9     | 3057     | 4078  | 1.2 | 710.888 | GFL11-3M□□□080C32 | E84AV□□□2224□□□ | 196 |
| 0.2      | 0.8      | - | 4.4     | 3445     | 4595  | 1.2 | 801.000 | GFL11-3M□□□080C32 | E84AV□□□2224□□□ | 196 |

4



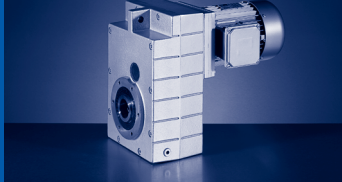


120 Hz:  $P_N = 3.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 23       | 141      | - | 544     | 38       | 51    | 2.6 | 6.400  | GFL05-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 23       | 140      | - | 542     | 39       | 51    | 1.7 | 6.422  | GFL04-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 23       | 140      | - | 540     | 39       | 52    | 3.1 | 6.450  | GFL06-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 21       | 128      | - | 495     | 42       | 56    | 1.5 | 7.025  | GFL04-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 16       | 100      | - | 386     | 54       | 72    | 2.8 | 9.010  | GFL05-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 15       | 91       | - | 350     | 60       | 79    | 2.6 | 9.946  | GFL05-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 14       | 89       | - | 345     | 61       | 81    | 3.1 | 10.092 | GFL06-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 14       | 88       | - | 340     | 61       | 82    | 1.5 | 10.238 | GFL04-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 10       | 62       | - | 239     | 87       | 116   | 2.0 | 14.538 | GFL05-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 9.9      | 61       | - | 237     | 88       | 118   | 1.2 | 14.706 | GFL04-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 9.8      | 61       | - | 236     | 88       | 118   | 3.1 | 14.743 | GFL06-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 9.1      | 57       | - | 219     | 95       | 127   | 1.8 | 15.904 | GFL05-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 9.0      | 56       | - | 216     | 96       | 129   | 1.1 | 16.087 | GFL04-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 9.0      | 56       | - | 216     | 97       | 129   | 3.1 | 16.128 | GFL06-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 8.1      | 50       | - | 194     | 107      | 143   | 1.6 | 17.920 | GFL05-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 8.0      | 50       | - | 192     | 109      | 145   | 3.1 | 18.169 | GFL06-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 7.2      | 44       | - | 172     | 122      | 162   | 1.6 | 20.286 | GFL05-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 7.2      | 44       | - | 172     | 122      | 162   | 3.1 | 20.286 | GFL07-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 7.1      | 44       | - | 169     | 123      | 164   | 2.9 | 20.571 | GFL06-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 6.3      | 39       | - | 152     | 137      | 183   | 1.3 | 22.857 | GFL05-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 6.3      | 39       | - | 152     | 137      | 183   | 3.1 | 22.857 | GFL07-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 6.3      | 39       | - | 150     | 139      | 185   | 2.5 | 23.175 | GFL06-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 5.8      | 36       | - | 140     | 149      | 199   | 1.5 | 24.850 | GFL05-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 5.8      | 36       | - | 138     | 151      | 201   | 2.8 | 25.200 | GFL06-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 5.2      | 32       | - | 124     | 168      | 224   | 1.2 | 28.000 | GFL05-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 5.1      | 32       | - | 123     | 170      | 227   | 2.3 | 28.389 | GFL06-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 4.5      | 28       | - | 108     | 194      | 258   | 1.1 | 32.344 | GFL05-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 4.5      | 28       | - | 108     | 194      | 258   | 2.9 | 32.344 | GFL07-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 4.4      | 27       | - | 106     | 197      | 262   | 2.1 | 32.800 | GFL06-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 4.0      | 25       | - | 96      | 218      | 291   | 0.9 | 36.444 | GFL05-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 4.0      | 25       | - | 96      | 218      | 291   | 2.9 | 36.444 | GFL07-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 3.9      | 24       | - | 94      | 221      | 295   | 1.8 | 36.951 | GFL06-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 3.7      | 23       | - | 88      | 238      | 317   | 2.4 | 39.642 | GFL07-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 3.6      | 22       | - | 87      | 241      | 321   | 0.9 | 40.233 | GFL05-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 3.6      | 22       | - | 85      | 244      | 326   | 1.7 | 40.800 | GFL06-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 3.3      | 20       | - | 78      | 268      | 357   | 2.4 | 44.667 | GFL07-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 3.2      | 20       | - | 76      | 275      | 367   | 1.4 | 45.963 | GFL06-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 2.8      | 17       | - | 67      | 312      | 416   | 2.3 | 52.067 | GFL07-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 2.8      | 17       | - | 66      | 316      | 422   | 1.3 | 52.800 | GFL06-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 2.4      | 15       | - | 59      | 356      | 475   | 1.1 | 59.481 | GFL06-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 2.5      | 15       | - | 59      | 352      | 469   | 2.3 | 58.667 | GFL07-2M□□□080C42 | E84AV□□□3024□□S | 188 |



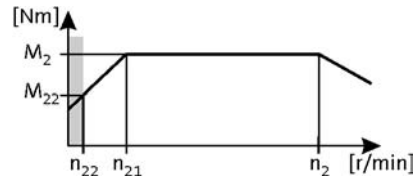
# GFL

GFL [Nm] - MF□MA

120 Hz:  $P_N = 3.00 \text{ kW}$

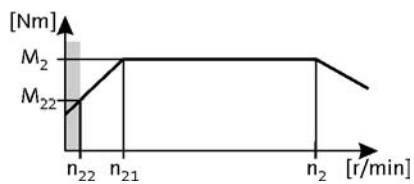
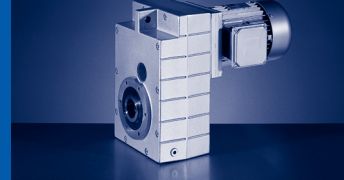
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 2.3      | 14       | - | 55      | 379      | 505   | 1.8 | 63.190  | GFL07-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 2.3      | 14       | - | 55      | 374      | 498   | 2.6 | 63.326  | GFL09-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 2.3      | 14       | - | 54      | 384      | 512   | 1.0 | 64.080  | GFL06-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 2.2      | 14       | - | 53      | 391      | 521   | 0.9 | 66.213  | GFL06-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 2.2      | 14       | - | 53      | 385      | 514   | 1.6 | 65.306  | GFL07-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 2.0      | 13       | - | 49      | 427      | 569   | 2.0 | 71.200  | GFL07-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 2.0      | 13       | - | 48      | 433      | 577   | 1.0 | 72.189  | GFL06-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 2.0      | 12       | - | 48      | 428      | 570   | 1.5 | 72.452  | GFL07-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 2.0      | 12       | - | 48      | 432      | 576   | 2.5 | 73.173  | GFL09-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 1.8      | 11       | - | 44      | 479      | 638   | 1.2 | 79.875  | GFL07-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 1.8      | 11       | - | 43      | 482      | 642   | 1.5 | 81.636  | GFL07-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 1.8      | 11       | - | 42      | 487      | 649   | 2.5 | 82.465  | GFL09-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 1.6      | 10       | - | 39      | 539      | 719   | 1.2 | 90.000  | GFL07-2M□□□080C42 | E84AV□□□3024□□S | 188 |
| 1.6      | 9.7      | - | 38      | 545      | 727   | 1.3 | 92.413  | GFL07-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 1.6      | 9.6      | - | 37      | 551      | 734   | 2.2 | 93.333  | GFL09-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 1.4      | 8.6      | - | 33      | 614      | 819   | 1.3 | 104.127 | GFL07-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 1.4      | 8.6      | - | 33      | 621      | 828   | 2.2 | 105.185 | GFL09-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 1.3      | 8.0      | - | 31      | 668      | 891   | 1.1 | 113.206 | GFL07-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 1.3      | 7.9      | - | 30      | 675      | 900   | 2.0 | 114.333 | GFL09-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 1.1      | 7.1      | - | 27      | 753      | 1004  | 1.1 | 127.556 | GFL07-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 1.1      | 7.0      | - | 27      | 760      | 1014  | 2.0 | 128.852 | GFL09-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 1.0      | 6.1      | - | 24      | 870      | 1159  | 0.9 | 147.347 | GFL07-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 1.0      | 6.1      | - | 23      | 878      | 1171  | 1.7 | 148.815 | GFL09-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 1.0      | 6.0      | - | 23      | 880      | 1173  | 3.2 | 149.144 | GFL11-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.9      | 5.4      | - | 21      | 980      | 1306  | 0.9 | 166.025 | GFL07-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.9      | 5.4      | - | 21      | 990      | 1320  | 1.7 | 167.712 | GFL09-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.9      | 5.4      | - | 21      | 992      | 1322  | 3.2 | 168.049 | GFL11-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.8      | 4.9      | - | 19      | 1092     | 1456  | 1.5 | 185.111 | GFL09-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.8      | 4.9      | - | 19      | 1079     | 1438  | 2.7 | 182.792 | GFL11-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.7      | 4.3      | - | 17      | 1231     | 1641  | 1.5 | 208.617 | GFL09-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.7      | 4.4      | - | 17      | 1215     | 1621  | 2.7 | 205.963 | GFL11-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.7      | 4.0      | - | 16      | 1326     | 1769  | 1.3 | 224.778 | GFL09-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.7      | 4.0      | - | 16      | 1326     | 1767  | 2.4 | 224.636 | GFL11-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.6      | 3.6      | - | 14      | 1495     | 1993  | 1.3 | 253.321 | GFL09-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.6      | 3.6      | - | 14      | 1494     | 1991  | 2.4 | 253.111 | GFL11-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.5      | 3.4      | - | 13      | 1577     | 2103  | 2.3 | 267.259 | GFL11-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.5      | 3.1      | - | 12      | 1717     | 2289  | 1.1 | 290.889 | GFL09-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.4      | 2.8      | - | 11      | 1935     | 2579  | 1.1 | 327.827 | GFL09-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.4      | 2.8      | - | 11      | 1933     | 2577  | 2.0 | 327.556 | GFL11-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.4      | 2.6      | - | 9.9     | 2083     | 2778  | 1.0 | 353.033 | GFL09-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.4      | 2.5      | - | 9.7     | 2113     | 2817  | 1.8 | 358.077 | GFL11-3M□□□080C42 | E84AV□□□3024□□S | 196 |

4

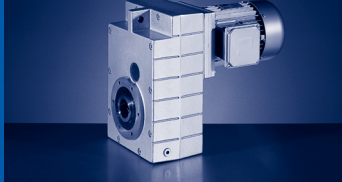


120 Hz:  $P_N = 3.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i       |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|---------|-------------------|-----------------|-----|
| 0.4                 | 2.3                 | - | 8.8              | 2348             | 3130          | 1.0 | 397.863 | GFL09-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.4                 | 2.2                 | - | 8.6              | 2381             | 3174          | 1.8 | 403.467 | GFL11-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.3                 | 2.1                 | - | 8.1              | 2539             | 3385          | 1.7 | 430.222 | GFL11-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.3                 | 1.7                 | - | 6.7              | 3081             | 4108          | 1.4 | 522.133 | GFL11-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.3                 | 1.6                 | - | 6.2              | 3319             | 4425          | 1.1 | 562.391 | GFL11-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.2                 | 1.4                 | - | 5.5              | 3739             | 4986          | 1.1 | 633.680 | GFL11-3M□□□080C42 | E84AV□□□3024□□S | 196 |
| 0.2                 | 1.3                 | - | 4.9              | 4195             | 5593          | 0.9 | 710.888 | GFL11-3M□□□080C42 | E84AV□□□3024□□S | 196 |



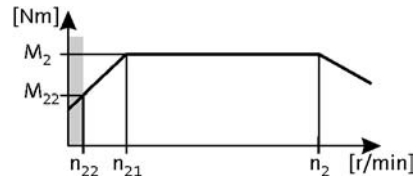
# GFL

GFL [Nm] - MF□MA

120 Hz:  $P_N = 4.00 \text{ kW}$

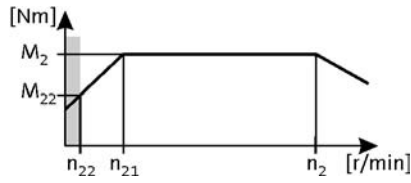
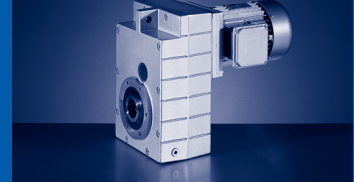
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 23       | 94       | - | 544     | 48       | 68    | 1.9 | 6.400  | GFL05-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 23       | 93       | - | 542     | 48       | 68    | 1.2 | 6.422  | GFL04-2M□□□090C32 | E84AV□□□4024□□□ | 192 |
| 23       | 93       | - | 540     | 48       | 69    | 2.9 | 6.450  | GFL06-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 21       | 85       | - | 495     | 52       | 75    | 1.1 | 7.025  | GFL04-2M□□□090C32 | E84AV□□□4024□□□ | 192 |
| 16       | 67       | - | 386     | 67       | 96    | 2.1 | 9.010  | GFL05-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 15       | 60       | - | 350     | 74       | 106   | 2.0 | 9.946  | GFL05-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 14       | 60       | - | 345     | 75       | 108   | 2.9 | 10.092 | GFL06-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 14       | 59       | - | 340     | 76       | 109   | 1.1 | 10.238 | GFL04-2M□□□090C32 | E84AV□□□4024□□□ | 192 |
| 10       | 41       | - | 239     | 108      | 155   | 1.5 | 14.538 | GFL05-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 9.8      | 41       | - | 236     | 110      | 157   | 2.9 | 14.743 | GFL06-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 9.1      | 38       | - | 219     | 119      | 169   | 1.4 | 15.904 | GFL05-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 9.0      | 37       | - | 216     | 120      | 172   | 2.8 | 16.128 | GFL06-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 8.1      | 34       | - | 194     | 134      | 191   | 1.2 | 17.920 | GFL05-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 8.0      | 33       | - | 192     | 136      | 194   | 2.3 | 18.169 | GFL06-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 7.2      | 30       | - | 172     | 151      | 216   | 1.2 | 20.286 | GFL05-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 7.2      | 30       | - | 172     | 151      | 216   | 2.9 | 20.286 | GFL07-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 7.1      | 29       | - | 169     | 153      | 219   | 2.2 | 20.571 | GFL06-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 6.3      | 26       | - | 152     | 170      | 243   | 1.0 | 22.857 | GFL05-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 6.3      | 26       | - | 152     | 170      | 243   | 2.9 | 22.857 | GFL07-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 6.3      | 26       | - | 150     | 173      | 247   | 1.8 | 23.175 | GFL06-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 5.8      | 24       | - | 140     | 185      | 265   | 1.1 | 24.850 | GFL05-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 5.8      | 24       | - | 138     | 188      | 268   | 2.1 | 25.200 | GFL06-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 5.2      | 21       | - | 124     | 209      | 298   | 0.9 | 28.000 | GFL05-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 5.1      | 21       | - | 123     | 212      | 302   | 1.7 | 28.389 | GFL06-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 4.5      | 19       | - | 108     | 241      | 345   | 2.8 | 32.344 | GFL07-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 4.4      | 18       | - | 106     | 245      | 349   | 1.6 | 32.800 | GFL06-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 4.0      | 17       | - | 96      | 272      | 388   | 2.8 | 36.444 | GFL07-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 3.9      | 16       | - | 94      | 276      | 394   | 1.3 | 36.951 | GFL06-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 3.7      | 15       | - | 88      | 296      | 422   | 2.3 | 39.642 | GFL07-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 3.6      | 15       | - | 85      | 304      | 435   | 1.3 | 40.800 | GFL06-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 3.3      | 13       | - | 78      | 333      | 476   | 2.3 | 44.667 | GFL07-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 3.2      | 13       | - | 76      | 343      | 490   | 1.1 | 45.963 | GFL06-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 2.8      | 12       | - | 68      | 383      | 547   | 2.3 | 51.333 | GFL09-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 2.8      | 12       | - | 67      | 388      | 555   | 1.9 | 52.067 | GFL07-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 2.8      | 11       | - | 66      | 394      | 562   | 1.0 | 52.800 | GFL06-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 2.5      | 10       | - | 60      | 431      | 616   | 2.3 | 57.852 | GFL09-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 2.5      | 10       | - | 59      | 437      | 625   | 1.7 | 58.667 | GFL07-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 2.3      | 9.6      | - | 56      | 465      | 664   | 2.0 | 62.300 | GFL09-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 2.3      | 9.5      | - | 55      | 471      | 673   | 1.6 | 63.190 | GFL07-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 2.3      | 9.5      | - | 55      | 465      | 664   | 2.0 | 63.326 | GFL09-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 2.2      | 9.2      | - | 53      | 480      | 685   | 1.2 | 65.306 | GFL07-3M□□□090C32 | E84AV□□□4024□□□ | 196 |

4

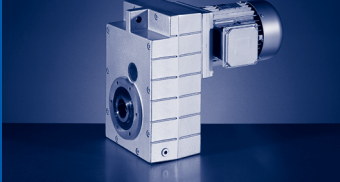


120 Hz:  $P_N = 4.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | $c$ | $i$     |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|---------|-------------------|-----------------|-----|
| 2.1                 | 8.6                 | - | 50               | 523              | 748           | 2.2 | 70.211  | GFL09-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 2.0                 | 8.4                 | - | 49               | 531              | 758           | 1.6 | 71.200  | GFL07-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 2.0                 | 8.3                 | - | 48               | 532              | 760           | 1.1 | 72.452  | GFL07-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 2.0                 | 8.2                 | - | 48               | 537              | 768           | 1.9 | 73.173  | GFL09-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 1.8                 | 7.5                 | - | 44               | 596              | 851           | 1.0 | 79.875  | GFL07-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 1.8                 | 7.6                 | - | 44               | 587              | 839           | 1.7 | 78.750  | GFL09-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 1.8                 | 7.4                 | - | 43               | 600              | 856           | 1.1 | 81.636  | GFL07-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 1.8                 | 7.3                 | - | 42               | 606              | 865           | 1.9 | 82.465  | GFL09-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 1.6                 | 6.7                 | - | 39               | 671              | 959           | 0.9 | 90.000  | GFL07-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 1.6                 | 6.8                 | - | 39               | 662              | 945           | 1.7 | 88.750  | GFL09-2M□□□090C32 | E84AV□□□4024□□□ | 188 |
| 1.6                 | 6.5                 | - | 38               | 679              | 969           | 0.9 | 92.413  | GFL07-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 1.6                 | 6.4                 | - | 37               | 685              | 979           | 1.6 | 93.333  | GFL09-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 1.6                 | 6.4                 | - | 37               | 687              | 981           | 3.1 | 93.540  | GFL11-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 1.4                 | 5.8                 | - | 33               | 765              | 1092          | 0.9 | 104.127 | GFL07-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 1.4                 | 5.7                 | - | 33               | 772              | 1103          | 1.6 | 105.185 | GFL09-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 1.4                 | 5.7                 | - | 33               | 774              | 1106          | 3.1 | 105.397 | GFL11-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 1.3                 | 5.3                 | - | 30               | 840              | 1199          | 1.5 | 114.333 | GFL09-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 1.1                 | 4.7                 | - | 27               | 946              | 1352          | 1.5 | 128.852 | GFL09-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 1.0                 | 4.0                 | - | 23               | 1093             | 1561          | 1.3 | 148.815 | GFL09-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 1.0                 | 4.0                 | - | 23               | 1095             | 1565          | 2.4 | 149.144 | GFL11-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.9                 | 3.6                 | - | 21               | 1232             | 1759          | 1.3 | 167.712 | GFL09-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.9                 | 3.6                 | - | 21               | 1234             | 1763          | 2.4 | 168.049 | GFL11-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.8                 | 3.2                 | - | 19               | 1359             | 1942          | 1.1 | 185.111 | GFL09-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.8                 | 3.3                 | - | 19               | 1342             | 1918          | 2.1 | 182.792 | GFL11-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.7                 | 2.9                 | - | 17               | 1532             | 2189          | 1.1 | 208.617 | GFL09-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.7                 | 2.9                 | - | 17               | 1512             | 2161          | 2.1 | 205.963 | GFL11-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.7                 | 3.0                 | - | 17               | 1484             | 2120          | 2.5 | 202.074 | GFL14-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.7                 | 2.7                 | - | 16               | 1651             | 2358          | 1.0 | 224.778 | GFL09-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.7                 | 2.7                 | - | 16               | 1650             | 2357          | 1.8 | 224.636 | GFL11-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.6                 | 2.4                 | - | 14               | 1860             | 2657          | 1.0 | 253.321 | GFL09-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.6                 | 2.4                 | - | 14               | 1859             | 2655          | 1.8 | 253.111 | GFL11-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.5                 | 2.3                 | - | 13               | 1963             | 2804          | 1.7 | 267.259 | GFL11-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.4                 | 1.8                 | - | 11               | 2405             | 3436          | 1.5 | 327.556 | GFL11-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.4                 | 1.7                 | - | 9.9              | 2591             | 3701          | 2.2 | 352.811 | GFL14-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.4                 | 1.7                 | - | 9.7              | 2630             | 3756          | 1.3 | 358.077 | GFL11-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.4                 | 1.5                 | - | 8.8              | 2919             | 4170          | 2.2 | 397.533 | GFL14-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.4                 | 1.5                 | - | 8.6              | 2963             | 4233          | 1.3 | 403.467 | GFL11-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.3                 | 1.4                 | - | 8.1              | 3159             | 4513          | 1.3 | 430.222 | GFL11-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.3                 | 1.4                 | - | 8.1              | 3159             | 4513          | 2.2 | 430.222 | GFL14-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.3                 | 1.2                 | - | 6.7              | 3834             | 5477          | 1.0 | 522.133 | GFL11-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.3                 | 1.2                 | - | 6.7              | 3834             | 5477          | 1.8 | 522.133 | GFL14-3M□□□090C32 | E84AV□□□4024□□□ | 196 |



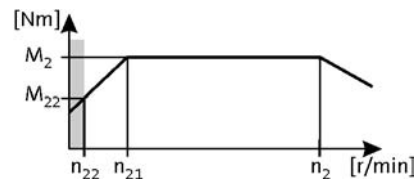
# GFL

GFL [Nm] - MF□MA

120 Hz:  $P_N = 4.00 \text{ kW}$

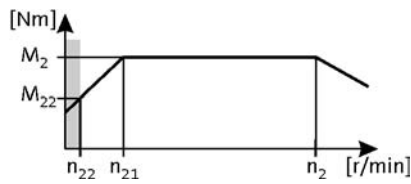
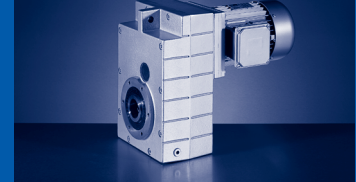
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 0.3      | 1.1      | - | 6.2     | 4130     | 5900  | 1.5 | 562.391 | GFL14-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.2      | 1.0      | - | 5.5     | 4653     | 6648  | 1.4 | 633.680 | GFL14-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.2      | 0.8      | - | 4.9     | 5220     | 7458  | 1.2 | 710.888 | GFL14-3M□□□090C32 | E84AV□□□4024□□□ | 196 |
| 0.2      | 0.8      | - | 4.3     | 5882     | 8403  | 1.1 | 801.000 | GFL14-3M□□□090C32 | E84AV□□□4024□□□ | 196 |



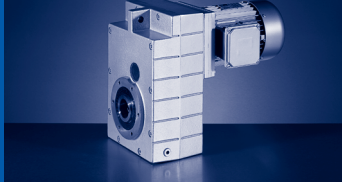


120 Hz:  $P_N = 5.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 146.9 \dots 3525 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | $c$ | $i$    |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|--------|-------------------|-----------------|-----|
| 23                  | 94                  | - | 551              | 65               | 93            | 1.4 | 6.400  | GFL05-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 23                  | 93                  | - | 547              | 65               | 93            | 2.8 | 6.450  | GFL06-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 16                  | 67                  | - | 391              | 91               | 130           | 1.5 | 9.010  | GFL05-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 15                  | 60                  | - | 354              | 101              | 144           | 1.4 | 9.946  | GFL05-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 15                  | 60                  | - | 349              | 102              | 146           | 2.4 | 10.092 | GFL06-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 10                  | 41                  | - | 243              | 147              | 210           | 1.1 | 14.538 | GFL05-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 10                  | 41                  | - | 239              | 149              | 213           | 2.3 | 14.743 | GFL06-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 9.2                 | 38                  | - | 222              | 161              | 230           | 1.0 | 15.904 | GFL05-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 9.1                 | 37                  | - | 219              | 163              | 233           | 2.1 | 16.128 | GFL06-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 8.2                 | 34                  | - | 197              | 181              | 259           | 0.9 | 17.920 | GFL05-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 8.1                 | 33                  | - | 194              | 184              | 263           | 1.7 | 18.169 | GFL06-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 7.2                 | 30                  | - | 174              | 205              | 293           | 3.2 | 20.286 | GFL07-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 7.1                 | 29                  | - | 171              | 208              | 297           | 1.6 | 20.571 | GFL06-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 6.4                 | 26                  | - | 154              | 231              | 330           | 2.8 | 22.857 | GFL07-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 6.3                 | 26                  | - | 152              | 235              | 335           | 1.4 | 23.175 | GFL06-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 5.9                 | 24                  | - | 142              | 252              | 359           | 3.2 | 24.850 | GFL07-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 5.8                 | 24                  | - | 140              | 255              | 364           | 1.5 | 25.200 | GFL06-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 5.3                 | 21                  | - | 126              | 283              | 405           | 2.6 | 28.000 | GFL07-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 5.2                 | 21                  | - | 124              | 287              | 410           | 1.3 | 28.389 | GFL06-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 4.5                 | 19                  | - | 109              | 327              | 468           | 2.5 | 32.344 | GFL07-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 4.5                 | 18                  | - | 108              | 332              | 474           | 1.2 | 32.800 | GFL06-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 4.0                 | 17                  | - | 97               | 369              | 527           | 2.0 | 36.444 | GFL07-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 4.0                 | 16                  | - | 95               | 374              | 534           | 1.0 | 36.951 | GFL06-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 3.7                 | 15                  | - | 89               | 401              | 573           | 2.1 | 39.642 | GFL07-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 3.7                 | 15                  | - | 89               | 401              | 574           | 2.9 | 39.667 | GFL09-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 3.6                 | 15                  | - | 86               | 413              | 590           | 1.0 | 40.800 | GFL06-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 3.3                 | 13                  | - | 79               | 452              | 646           | 1.7 | 44.667 | GFL07-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 3.3                 | 13                  | - | 79               | 452              | 646           | 2.9 | 44.704 | GFL09-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 2.9                 | 12                  | - | 69               | 520              | 742           | 2.3 | 51.333 | GFL09-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 2.8                 | 12                  | - | 68               | 527              | 753           | 1.5 | 52.067 | GFL07-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 2.8                 | 12                  | - | 68               | 527              | 753           | 2.9 | 52.067 | GFL11-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 2.5                 | 10                  | - | 61               | 586              | 836           | 2.3 | 57.852 | GFL09-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 2.5                 | 10                  | - | 60               | 594              | 848           | 1.3 | 58.667 | GFL07-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 2.5                 | 10                  | - | 60               | 594              | 848           | 2.9 | 58.667 | GFL11-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 2.4                 | 9.6                 | - | 57               | 631              | 901           | 1.9 | 62.300 | GFL09-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 2.3                 | 9.5                 | - | 56               | 640              | 914           | 1.2 | 63.190 | GFL07-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 2.3                 | 9.5                 | - | 56               | 631              | 902           | 1.4 | 63.326 | GFL09-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 2.3                 | 9.5                 | - | 56               | 640              | 914           | 2.4 | 63.190 | GFL11-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 2.3                 | 9.2                 | - | 54               | 651              | 930           | 2.9 | 65.306 | GFL11-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 2.1                 | 8.4                 | - | 50               | 721              | 1029          | 1.2 | 71.200 | GFL07-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 2.1                 | 8.6                 | - | 50               | 711              | 1015          | 2.1 | 70.211 | GFL09-2M□□□100C12 | E84AV□□□5524□□□ | 188 |



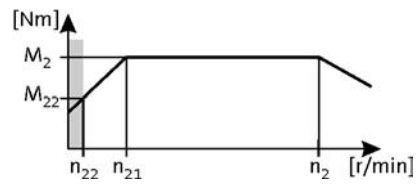
# GFL

GFL [Nm] - MF□MA

120 Hz:  $P_N = 5.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

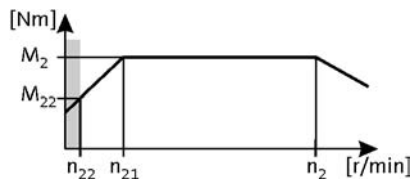
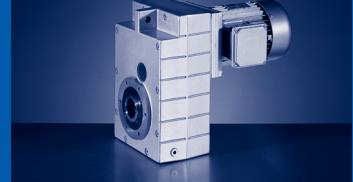
$n_1 = 146.9 \dots 3525 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 2.1      | 8.4      | - | 50      | 721      | 1029  | 2.7 | 71.200  | GFL11-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 2.0      | 8.2      | - | 48      | 729      | 1042  | 1.4 | 73.173  | GFL09-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 2.0      | 8.2      | - | 48      | 731      | 1044  | 2.6 | 73.335  | GFL11-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 1.9      | 7.6      | - | 45      | 797      | 1139  | 1.4 | 78.750  | GFL09-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 1.8      | 7.5      | - | 44      | 808      | 1155  | 2.2 | 79.875  | GFL11-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 1.8      | 7.3      | - | 43      | 822      | 1174  | 1.4 | 82.465  | GFL09-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 1.8      | 7.3      | - | 43      | 824      | 1177  | 2.6 | 82.631  | GFL11-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 1.7      | 6.8      | - | 40      | 898      | 1283  | 1.3 | 88.750  | GFL09-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 1.6      | 6.7      | - | 39      | 911      | 1301  | 2.2 | 90.000  | GFL11-2M□□□100C12 | E84AV□□□5524□□□ | 188 |
| 1.6      | 6.4      | - | 38      | 930      | 1329  | 1.2 | 93.333  | GFL09-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 1.6      | 6.4      | - | 38      | 932      | 1332  | 2.3 | 93.540  | GFL11-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 1.4      | 5.7      | - | 34      | 1049     | 1498  | 1.2 | 105.185 | GFL09-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 1.4      | 5.7      | - | 33      | 1051     | 1501  | 2.3 | 105.397 | GFL11-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 1.3      | 5.3      | - | 31      | 1140     | 1628  | 1.1 | 114.333 | GFL09-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 1.3      | 5.2      | - | 31      | 1142     | 1632  | 2.0 | 114.586 | GFL11-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 1.1      | 4.7      | - | 27      | 1284     | 1835  | 1.1 | 128.852 | GFL09-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 1.1      | 4.7      | - | 27      | 1287     | 1839  | 2.0 | 129.111 | GFL11-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 1.0      | 4.0      | - | 24      | 1483     | 2119  | 0.9 | 148.815 | GFL09-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 1.0      | 4.0      | - | 24      | 1487     | 2124  | 1.7 | 149.144 | GFL11-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.9      | 3.8      | - | 23      | 1557     | 2224  | 3.2 | 156.148 | GFL14-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.9      | 3.6      | - | 21      | 1672     | 2388  | 0.9 | 167.712 | GFL09-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.9      | 3.6      | - | 21      | 1675     | 2393  | 1.7 | 168.049 | GFL11-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.8      | 3.3      | - | 19      | 1822     | 2603  | 1.5 | 182.792 | GFL11-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.7      | 2.9      | - | 17      | 2053     | 2933  | 1.5 | 205.963 | GFL11-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.7      | 3.0      | - | 17      | 2014     | 2878  | 2.6 | 202.074 | GFL14-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.7      | 2.7      | - | 16      | 2239     | 3199  | 1.3 | 224.636 | GFL11-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.7      | 2.7      | - | 16      | 2239     | 3199  | 2.6 | 224.636 | GFL14-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.6      | 2.4      | - | 14      | 2523     | 3604  | 1.3 | 253.111 | GFL11-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.6      | 2.4      | - | 14      | 2523     | 3604  | 2.6 | 253.111 | GFL14-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.6      | 2.3      | - | 13      | 2664     | 3806  | 1.3 | 267.259 | GFL11-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.5      | 2.2      | - | 13      | 2729     | 3899  | 2.4 | 273.778 | GFL14-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.5      | 1.8      | - | 11      | 3265     | 4665  | 1.1 | 327.556 | GFL11-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.4      | 1.8      | - | 11      | 3314     | 4734  | 2.1 | 332.444 | GFL14-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.4      | 1.7      | - | 10      | 3517     | 5024  | 2.0 | 352.811 | GFL14-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.4      | 1.7      | - | 9.8     | 3569     | 5099  | 1.0 | 358.077 | GFL11-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.4      | 1.5      | - | 8.9     | 3963     | 5661  | 1.9 | 397.533 | GFL14-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.4      | 1.5      | - | 8.7     | 4022     | 5745  | 1.0 | 403.467 | GFL11-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.3      | 1.4      | - | 8.2     | 4289     | 6126  | 0.9 | 430.222 | GFL11-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.3      | 1.4      | - | 8.2     | 4289     | 6126  | 1.6 | 430.222 | GFL14-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.3      | 1.2      | - | 6.8     | 5205     | 7435  | 1.3 | 522.133 | GFL14-3M□□□100C12 | E84AV□□□5524□□□ | 196 |
| 0.3      | 1.1      | - | 6.3     | 5606     | 8009  | 1.1 | 562.391 | GFL14-3M□□□100C12 | E84AV□□□5524□□□ | 196 |

4



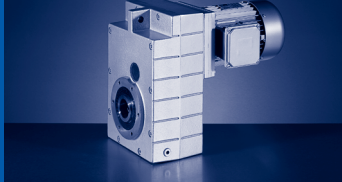


120 Hz:  $P_N = 5.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 146.9 \dots 3525 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 0.2      | 1.0      | - | 5.6     | 6317     | 9024  | 1.0 | 633.680 | GFL14-3M□□□100C12 | E84AV□□□5524□□□ | 196 |



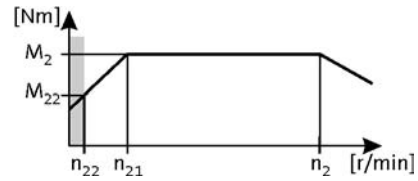
# GFL

GFL [Nm] - MF□MA

120 Hz:  $P_N = 7.50 \text{ kW}$

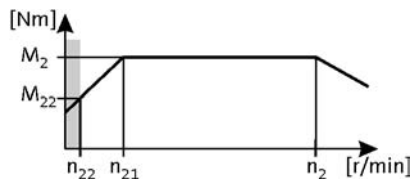
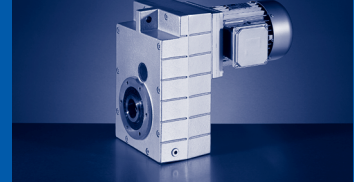
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 146.5 \dots 3515 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 23       | 94       | - | 549     | 89       | 127   | 1.0 | 6.400  | GFL05-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 23       | 94       | - | 549     | 89       | 127   | 3.0 | 6.400  | GFL07-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 23       | 93       | - | 545     | 89       | 128   | 2.1 | 6.450  | GFL06-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 16       | 67       | - | 390     | 125      | 178   | 1.1 | 9.010  | GFL05-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 15       | 62       | - | 362     | 134      | 192   | 3.1 | 9.714  | GFL07-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 15       | 60       | - | 353     | 138      | 197   | 1.1 | 9.946  | GFL05-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 15       | 60       | - | 348     | 140      | 200   | 1.7 | 10.092 | GFL06-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 10       | 42       | - | 248     | 197      | 281   | 3.1 | 14.200 | GFL07-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 9.9      | 41       | - | 238     | 204      | 292   | 1.7 | 14.743 | GFL06-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 9.2      | 38       | - | 221     | 220      | 314   | 2.8 | 15.904 | GFL07-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 9.1      | 37       | - | 218     | 223      | 319   | 1.5 | 16.128 | GFL06-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 8.2      | 34       | - | 196     | 248      | 354   | 2.5 | 17.920 | GFL07-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 8.1      | 33       | - | 194     | 251      | 359   | 1.3 | 18.169 | GFL06-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 7.5      | 31       | - | 179     | 272      | 389   | 3.1 | 19.667 | GFL09-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 7.2      | 30       | - | 173     | 281      | 401   | 2.4 | 20.286 | GFL07-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 7.1      | 29       | - | 171     | 285      | 407   | 1.2 | 20.571 | GFL06-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 6.6      | 27       | - | 159     | 307      | 438   | 3.1 | 22.164 | GFL09-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 6.4      | 26       | - | 154     | 316      | 452   | 2.1 | 22.857 | GFL07-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 6.3      | 26       | - | 152     | 321      | 458   | 1.0 | 23.175 | GFL06-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 5.9      | 24       | - | 141     | 344      | 491   | 2.3 | 24.850 | GFL07-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 5.8      | 24       | - | 140     | 349      | 498   | 1.1 | 25.200 | GFL06-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 5.2      | 21       | - | 126     | 388      | 554   | 1.9 | 28.000 | GFL07-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 5.2      | 21       | - | 124     | 393      | 561   | 0.9 | 28.389 | GFL06-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 4.5      | 19       | - | 109     | 448      | 640   | 1.8 | 32.344 | GFL07-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 4.5      | 18       | - | 108     | 452      | 646   | 2.5 | 32.667 | GFL09-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 4.0      | 17       | - | 96      | 504      | 721   | 1.5 | 36.444 | GFL07-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 4.0      | 16       | - | 96      | 510      | 728   | 2.5 | 36.815 | GFL09-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 3.7      | 15       | - | 89      | 549      | 784   | 1.5 | 39.642 | GFL07-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 3.7      | 15       | - | 89      | 549      | 784   | 2.1 | 39.667 | GFL09-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 3.3      | 13       | - | 79      | 618      | 883   | 1.2 | 44.667 | GFL07-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 3.3      | 13       | - | 79      | 619      | 884   | 2.1 | 44.704 | GFL09-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 2.9      | 12       | - | 69      | 710      | 1015  | 1.7 | 51.333 | GFL09-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 2.8      | 12       | - | 68      | 721      | 1029  | 1.1 | 52.067 | GFL07-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 2.8      | 12       | - | 68      | 721      | 1029  | 2.1 | 52.067 | GFL11-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 2.5      | 10       | - | 61      | 801      | 1144  | 1.7 | 57.852 | GFL09-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 2.5      | 10       | - | 60      | 812      | 1160  | 0.9 | 58.667 | GFL07-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 2.5      | 10       | - | 60      | 812      | 1160  | 2.1 | 58.667 | GFL11-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 2.3      | 9.5      | - | 56      | 863      | 1233  | 1.0 | 63.326 | GFL09-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 2.4      | 9.6      | - | 56      | 862      | 1232  | 1.4 | 62.300 | GFL09-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 2.3      | 9.5      | - | 56      | 875      | 1249  | 1.8 | 63.190 | GFL11-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 2.2      | 9.2      | - | 54      | 890      | 1272  | 2.2 | 65.306 | GFL11-3M□□□100C32 | E84AV□□□7524□□□ | 196 |

4

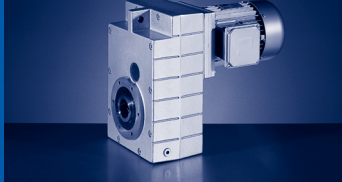


120 Hz:  $P_N = 7.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 146.5 \dots 3515 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i       |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|---------|-------------------|-----------------|-----|
| 2.1                 | 8.6                 | - | 50               | 972              | 1388          | 1.6 | 70.211  | GFL09-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 2.1                 | 8.4                 | - | 49               | 985              | 1408          | 2.0 | 71.200  | GFL11-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 2.0                 | 8.2                 | - | 48               | 998              | 1425          | 1.0 | 73.173  | GFL09-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 2.0                 | 8.2                 | - | 48               | 1000             | 1428          | 1.9 | 73.335  | GFL11-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 1.9                 | 7.6                 | - | 45               | 1090             | 1557          | 1.0 | 78.750  | GFL09-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 1.8                 | 7.5                 | - | 44               | 1105             | 1579          | 1.6 | 79.875  | GFL11-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 1.8                 | 7.3                 | - | 43               | 1124             | 1606          | 1.0 | 82.465  | GFL09-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 1.8                 | 7.3                 | - | 43               | 1126             | 1609          | 1.9 | 82.631  | GFL11-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 1.7                 | 6.8                 | - | 40               | 1228             | 1755          | 1.0 | 88.750  | GFL09-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 1.6                 | 6.7                 | - | 39               | 1246             | 1779          | 1.6 | 90.000  | GFL11-2M□□□100C32 | E84AV□□□7524□□□ | 188 |
| 1.6                 | 6.4                 | - | 38               | 1275             | 1822          | 1.7 | 93.540  | GFL11-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 1.4                 | 5.7                 | - | 34               | 1430             | 2043          | 2.7 | 104.889 | GFL14-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 1.4                 | 5.7                 | - | 33               | 1437             | 2053          | 1.7 | 105.397 | GFL11-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 1.3                 | 5.2                 | - | 31               | 1562             | 2231          | 1.5 | 114.586 | GFL11-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 1.3                 | 5.3                 | - | 31               | 1556             | 2223          | 2.7 | 114.126 | GFL14-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 1.1                 | 4.7                 | - | 27               | 1760             | 2514          | 1.5 | 129.111 | GFL11-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 1.1                 | 4.7                 | - | 27               | 1753             | 2504          | 2.7 | 128.593 | GFL14-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 1.0                 | 4.0                 | - | 24               | 2033             | 2904          | 1.3 | 149.144 | GFL11-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 0.9                 | 3.8                 | - | 23               | 2129             | 3041          | 2.3 | 156.148 | GFL14-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 0.9                 | 3.6                 | - | 21               | 2291             | 3273          | 1.3 | 168.049 | GFL11-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 0.9                 | 3.5                 | - | 21               | 2318             | 3312          | 2.4 | 170.074 | GFL14-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 0.8                 | 3.3                 | - | 19               | 2492             | 3560          | 1.1 | 182.792 | GFL11-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 0.7                 | 2.9                 | - | 17               | 2808             | 4011          | 1.1 | 205.963 | GFL11-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 0.7                 | 3.0                 | - | 17               | 2755             | 3935          | 1.9 | 202.074 | GFL14-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 0.7                 | 2.7                 | - | 16               | 3062             | 4375          | 1.0 | 224.636 | GFL11-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 0.7                 | 2.7                 | - | 16               | 3062             | 4375          | 1.9 | 224.636 | GFL14-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 0.6                 | 2.4                 | - | 14               | 3450             | 4929          | 1.0 | 253.111 | GFL11-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 0.6                 | 2.4                 | - | 14               | 3450             | 4929          | 1.9 | 253.111 | GFL14-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 0.6                 | 2.3                 | - | 13               | 3643             | 5205          | 0.9 | 267.259 | GFL11-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 0.5                 | 2.2                 | - | 13               | 3732             | 5332          | 1.7 | 273.778 | GFL14-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 0.4                 | 1.8                 | - | 11               | 4532             | 6474          | 1.5 | 332.444 | GFL14-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 0.4                 | 1.7                 | - | 10               | 4809             | 6871          | 1.4 | 352.811 | GFL14-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 0.4                 | 1.5                 | - | 8.8              | 5419             | 7741          | 1.4 | 397.533 | GFL14-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 0.3                 | 1.4                 | - | 8.2              | 5865             | 8378          | 1.2 | 430.222 | GFL14-3M□□□100C32 | E84AV□□□7524□□□ | 196 |
| 0.3                 | 1.2                 | - | 6.7              | 7118             | 10168         | 1.0 | 522.133 | GFL14-3M□□□100C32 | E84AV□□□7524□□□ | 196 |



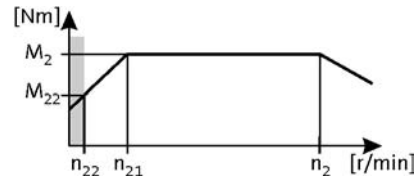
# GFL

GFL [Nm] - MF□MA

120 Hz:  $P_N = 11.00 \text{ kW}$

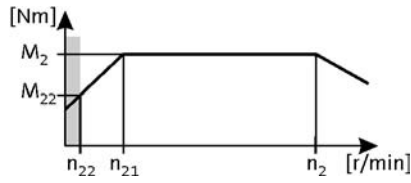
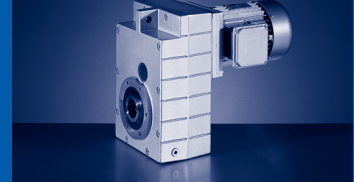
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 147.1 \dots 3530 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 23       | 94       | - | 552     | 118      | 185   | 2.3 | 6.400  | GFL07-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 23       | 93       | - | 547     | 119      | 186   | 1.4 | 6.450  | GFL06-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 16       | 67       | - | 392     | 167      | 260   | 3.2 | 9.010  | GFL09-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 15       | 62       | - | 363     | 180      | 281   | 2.4 | 9.714  | GFL07-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 15       | 61       | - | 360     | 181      | 283   | 3.2 | 9.799  | GFL09-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 15       | 60       | - | 350     | 187      | 291   | 1.2 | 10.092 | GFL06-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 13       | 54       | - | 316     | 206      | 322   | 2.9 | 11.167 | GFL09-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 10       | 42       | - | 249     | 262      | 410   | 2.1 | 14.200 | GFL07-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 10       | 42       | - | 246     | 265      | 414   | 3.2 | 14.333 | GFL09-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 10       | 41       | - | 239     | 272      | 426   | 1.1 | 14.743 | GFL06-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 9.3      | 38       | - | 222     | 294      | 459   | 1.9 | 15.904 | GFL07-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 9.1      | 37       | - | 219     | 298      | 466   | 1.0 | 16.128 | GFL06-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 9.0      | 37       | - | 216     | 302      | 472   | 2.9 | 16.333 | GFL09-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 8.2      | 34       | - | 197     | 331      | 517   | 1.7 | 17.920 | GFL07-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 8.0      | 33       | - | 192     | 340      | 532   | 2.9 | 18.407 | GFL09-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 7.5      | 31       | - | 180     | 363      | 568   | 2.5 | 19.667 | GFL09-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 7.3      | 30       | - | 174     | 375      | 586   | 1.6 | 20.286 | GFL07-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 7.3      | 30       | - | 174     | 375      | 586   | 3.1 | 20.286 | GFL11-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 6.6      | 27       | - | 159     | 410      | 640   | 2.5 | 22.164 | GFL09-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 6.4      | 26       | - | 154     | 422      | 660   | 1.4 | 22.857 | GFL07-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 6.4      | 26       | - | 154     | 422      | 660   | 3.1 | 22.857 | GFL11-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 6.1      | 25       | - | 146     | 446      | 696   | 2.5 | 24.111 | GFL09-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 5.9      | 24       | - | 142     | 459      | 718   | 1.6 | 24.850 | GFL07-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 5.4      | 22       | - | 130     | 502      | 785   | 2.5 | 27.173 | GFL09-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 5.3      | 21       | - | 126     | 517      | 808   | 1.3 | 28.000 | GFL07-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 4.6      | 19       | - | 109     | 598      | 934   | 1.3 | 32.344 | GFL07-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 4.5      | 18       | - | 108     | 604      | 943   | 1.9 | 32.667 | GFL09-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 4.5      | 18       | - | 108     | 605      | 945   | 2.5 | 32.739 | GFL11-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 4.0      | 17       | - | 97      | 673      | 1052  | 1.0 | 36.444 | GFL07-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 4.0      | 16       | - | 96      | 680      | 1063  | 1.9 | 36.815 | GFL09-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 4.0      | 16       | - | 96      | 682      | 1065  | 2.5 | 36.889 | GFL11-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 3.7      | 15       | - | 89      | 733      | 1145  | 1.0 | 39.642 | GFL07-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 3.7      | 15       | - | 89      | 733      | 1145  | 1.7 | 39.667 | GFL09-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 3.7      | 15       | - | 88      | 744      | 1162  | 2.1 | 40.233 | GFL11-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 3.3      | 13       | - | 79      | 826      | 1291  | 1.7 | 44.704 | GFL09-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 3.2      | 13       | - | 78      | 838      | 1309  | 2.1 | 45.333 | GFL11-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 2.9      | 12       | - | 69      | 949      | 1482  | 1.3 | 51.333 | GFL09-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 2.8      | 12       | - | 68      | 962      | 1503  | 1.6 | 52.067 | GFL11-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 2.8      | 12       | - | 68      | 962      | 1503  | 2.0 | 52.067 | GFL14-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 2.5      | 10       | - | 61      | 1069     | 1670  | 1.3 | 57.852 | GFL09-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 2.5      | 10       | - | 60      | 1084     | 1694  | 1.6 | 58.667 | GFL11-2M□□□112C22 | E84AV□□□1134□□□ | 188 |

4

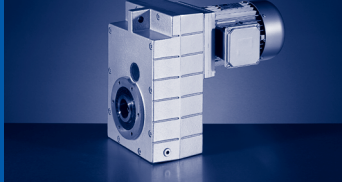


120 Hz:  $P_N = 11.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 147.1 \dots 3530 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i       |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|---------|-------------------|-----------------|-----|
| 2.5                 | 10                  | - | 60               | 1084             | 1694          | 2.0 | 58.667  | GFL14-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 2.4                 | 9.6                 | - | 57               | 1151             | 1799          | 1.1 | 62.300  | GFL09-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 2.3                 | 9.5                 | - | 56               | 1168             | 1825          | 1.4 | 63.190  | GFL11-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 2.3                 | 9.5                 | - | 56               | 1168             | 1825          | 1.7 | 63.190  | GFL14-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 2.3                 | 9.3                 | - | 55               | 1170             | 1829          | 2.6 | 64.296  | GFL14-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 2.3                 | 9.2                 | - | 54               | 1189             | 1857          | 1.5 | 65.306  | GFL11-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 2.1                 | 8.7                 | - | 51               | 1251             | 1954          | 2.6 | 68.708  | GFL14-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 2.1                 | 8.6                 | - | 50               | 1297             | 2027          | 1.2 | 70.211  | GFL09-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 2.1                 | 8.4                 | - | 50               | 1316             | 2056          | 1.5 | 71.200  | GFL11-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 2.1                 | 8.4                 | - | 50               | 1316             | 2056          | 1.9 | 71.200  | GFL14-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 2.0                 | 8.2                 | - | 48               | 1335             | 2086          | 1.3 | 73.335  | GFL11-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 1.9                 | 7.8                 | - | 46               | 1409             | 2202          | 2.6 | 77.418  | GFL14-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 1.8                 | 7.5                 | - | 44               | 1476             | 2306          | 1.2 | 79.875  | GFL11-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 1.8                 | 7.5                 | - | 44               | 1476             | 2306          | 1.5 | 79.875  | GFL14-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 1.8                 | 7.3                 | - | 43               | 1504             | 2350          | 1.3 | 82.631  | GFL11-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 1.7                 | 7.1                 | - | 42               | 1548             | 2419          | 2.5 | 85.037  | GFL14-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 1.6                 | 6.7                 | - | 39               | 1663             | 2599          | 1.2 | 90.000  | GFL11-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 1.6                 | 6.7                 | - | 39               | 1663             | 2599          | 1.5 | 90.000  | GFL14-2M□□□112C22 | E84AV□□□1134□□□ | 188 |
| 1.6                 | 6.4                 | - | 38               | 1703             | 2660          | 1.1 | 93.540  | GFL11-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 1.4                 | 5.7                 | - | 34               | 1918             | 2998          | 1.1 | 105.397 | GFL11-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 1.4                 | 5.7                 | - | 34               | 1909             | 2983          | 2.1 | 104.889 | GFL14-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 1.3                 | 5.2                 | - | 31               | 2086             | 3259          | 1.0 | 114.586 | GFL11-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 1.3                 | 5.3                 | - | 31               | 2077             | 3246          | 2.0 | 114.126 | GFL14-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 1.1                 | 4.7                 | - | 28               | 2341             | 3657          | 2.0 | 128.593 | GFL14-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 1.1                 | 4.7                 | - | 27               | 2350             | 3672          | 1.0 | 129.111 | GFL11-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 1.1                 | 4.4                 | - | 26               | 2492             | 3893          | 1.8 | 136.889 | GFL14-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 0.9                 | 3.8                 | - | 23               | 2842             | 4441          | 1.8 | 156.148 | GFL14-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 0.9                 | 3.5                 | - | 21               | 3096             | 4837          | 1.6 | 170.074 | GFL14-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 0.7                 | 3.0                 | - | 18               | 3678             | 5747          | 1.5 | 202.074 | GFL14-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 0.7                 | 2.7                 | - | 16               | 4089             | 6389          | 1.3 | 224.636 | GFL14-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 0.6                 | 2.4                 | - | 14               | 4607             | 7199          | 1.3 | 253.111 | GFL14-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 0.5                 | 2.2                 | - | 13               | 4983             | 7786          | 1.2 | 273.778 | GFL14-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 0.4                 | 1.8                 | - | 11               | 6051             | 9455          | 1.1 | 332.444 | GFL14-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 0.4                 | 1.7                 | - | 10               | 6422             | 10034         | 1.0 | 352.811 | GFL14-3M□□□112C22 | E84AV□□□1134□□□ | 196 |
| 0.4                 | 1.5                 | - | 8.9              | 7236             | 11306         | 1.0 | 397.533 | GFL14-3M□□□112C22 | E84AV□□□1134□□□ | 196 |



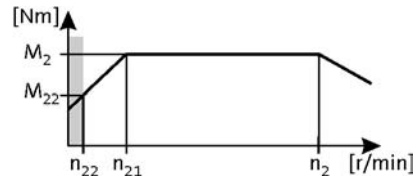
# GFL

GFL [Nm] - MF□MA

120 Hz:  $P_N = 15.00 \text{ kW}$

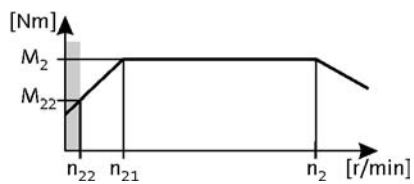
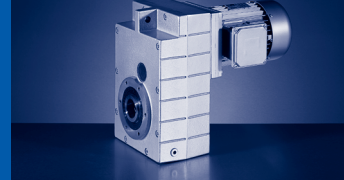
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 148.3 \dots 3560 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 23       | 94       | - | 556     | 160      | 250   | 2.0 | 6.400  | GFL07-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 17       | 67       | - | 395     | 225      | 352   | 4.3 | 9.010  | GFL09-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 15       | 62       | - | 367     | 243      | 379   | 1.9 | 9.714  | GFL07-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 13       | 54       | - | 319     | 279      | 436   | 4.0 | 11.167 | GFL09-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 10       | 42       | - | 251     | 355      | 554   | 1.5 | 14.200 | GFL07-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 10       | 42       | - | 248     | 358      | 560   | 3.2 | 14.333 | GFL09-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 9.3      | 38       | - | 224     | 397      | 621   | 1.4 | 15.904 | GFL07-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 9.1      | 37       | - | 218     | 408      | 638   | 2.9 | 16.333 | GFL09-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 8.3      | 34       | - | 199     | 448      | 700   | 1.3 | 17.920 | GFL07-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 8.1      | 33       | - | 193     | 460      | 719   | 2.6 | 18.407 | GFL09-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 7.5      | 31       | - | 181     | 491      | 768   | 2.5 | 19.667 | GFL09-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 7.3      | 30       | - | 176     | 507      | 792   | 1.2 | 20.286 | GFL07-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 6.7      | 27       | - | 161     | 554      | 865   | 2.3 | 22.164 | GFL09-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 6.5      | 26       | - | 156     | 571      | 892   | 1.0 | 22.857 | GFL07-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 6.2      | 25       | - | 148     | 602      | 941   | 2.5 | 24.111 | GFL09-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 6.0      | 24       | - | 143     | 621      | 970   | 1.2 | 24.850 | GFL07-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 5.5      | 22       | - | 131     | 679      | 1061  | 2.2 | 27.173 | GFL09-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 5.3      | 21       | - | 127     | 700      | 1093  | 1.0 | 28.000 | GFL07-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 4.5      | 18       | - | 109     | 816      | 1275  | 2.0 | 32.667 | GFL09-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 4.5      | 18       | - | 109     | 818      | 1278  | 3.1 | 32.739 | GFL11-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 4.0      | 16       | - | 97      | 920      | 1437  | 1.8 | 36.815 | GFL09-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 4.0      | 16       | - | 97      | 922      | 1440  | 2.7 | 36.889 | GFL11-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 3.7      | 15       | - | 90      | 991      | 1549  | 1.7 | 39.667 | GFL09-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 3.7      | 15       | - | 89      | 1005     | 1571  | 2.6 | 40.233 | GFL11-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 3.3      | 13       | - | 80      | 1117     | 1745  | 1.5 | 44.704 | GFL09-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 3.3      | 13       | - | 79      | 1133     | 1770  | 2.3 | 45.333 | GFL11-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 2.9      | 12       | - | 68      | 1301     | 2033  | 2.2 | 52.067 | GFL11-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 2.9      | 12       | - | 68      | 1301     | 2033  | 3.2 | 52.067 | GFL14-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 2.5      | 10       | - | 61      | 1466     | 2290  | 2.0 | 58.667 | GFL11-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 2.5      | 10       | - | 61      | 1466     | 2290  | 3.2 | 58.667 | GFL14-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 2.4      | 9.5      | - | 56      | 1579     | 2467  | 1.9 | 63.190 | GFL11-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 2.4      | 9.5      | - | 56      | 1579     | 2467  | 2.7 | 63.190 | GFL14-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 2.3      | 9.2      | - | 55      | 1607     | 2511  | 1.1 | 65.306 | GFL11-3M□□□132C12 | E84AV□□□1534□□□ | 196 |
| 2.3      | 9.3      | - | 55      | 1582     | 2473  | 1.9 | 64.296 | GFL14-3M□□□132C12 | E84AV□□□1534□□□ | 196 |
| 2.2      | 8.7      | - | 52      | 1691     | 2642  | 1.9 | 68.708 | GFL14-3M□□□132C12 | E84AV□□□1534□□□ | 196 |
| 2.1      | 8.4      | - | 50      | 1779     | 2780  | 1.9 | 71.200 | GFL11-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 2.1      | 8.4      | - | 50      | 1779     | 2780  | 3.0 | 71.200 | GFL14-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 2.0      | 8.2      | - | 49      | 1805     | 2820  | 1.0 | 73.335 | GFL11-3M□□□132C12 | E84AV□□□1534□□□ | 196 |
| 1.9      | 7.8      | - | 46      | 1905     | 2977  | 1.9 | 77.418 | GFL14-3M□□□132C12 | E84AV□□□1534□□□ | 196 |
| 1.9      | 7.5      | - | 45      | 1996     | 3118  | 2.1 | 79.875 | GFL14-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 1.8      | 7.3      | - | 43      | 2034     | 3178  | 1.0 | 82.631 | GFL11-3M□□□132C12 | E84AV□□□1534□□□ | 196 |

4

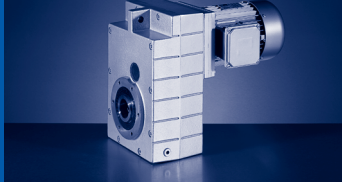


120 Hz:  $P_N = 15.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 148.3 \dots 3560 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 1.7      | 7.1      | - | 42      | 2093     | 3270  | 1.8 | 85.037  | GFL14-3M□□□132C12 | E84AV□□□1534□□□ | 196 |
| 1.7      | 6.7      | - | 40      | 2249     | 3514  | 2.1 | 90.000  | GFL14-2M□□□132C12 | E84AV□□□1534□□□ | 188 |
| 1.4      | 5.7      | - | 34      | 2581     | 4034  | 1.6 | 104.889 | GFL14-3M□□□132C12 | E84AV□□□1534□□□ | 196 |
| 1.3      | 5.3      | - | 31      | 2809     | 4389  | 1.4 | 114.126 | GFL14-3M□□□132C12 | E84AV□□□1534□□□ | 196 |
| 1.2      | 4.7      | - | 28      | 3165     | 4945  | 1.4 | 128.593 | GFL14-3M□□□132C12 | E84AV□□□1534□□□ | 196 |
| 1.1      | 4.4      | - | 26      | 3369     | 5264  | 1.3 | 136.889 | GFL14-3M□□□132C12 | E84AV□□□1534□□□ | 196 |
| 1.0      | 3.8      | - | 23      | 3843     | 6005  | 1.3 | 156.148 | GFL14-3M□□□132C12 | E84AV□□□1534□□□ | 196 |
| 0.9      | 3.5      | - | 21      | 4186     | 6540  | 1.2 | 170.074 | GFL14-3M□□□132C12 | E84AV□□□1534□□□ | 196 |
| 0.7      | 2.7      | - | 16      | 5529     | 8638  | 1.0 | 224.636 | GFL14-3M□□□132C12 | E84AV□□□1534□□□ | 196 |
| 0.6      | 2.4      | - | 14      | 6229     | 9733  | 1.0 | 253.111 | GFL14-3M□□□132C12 | E84AV□□□1534□□□ | 196 |



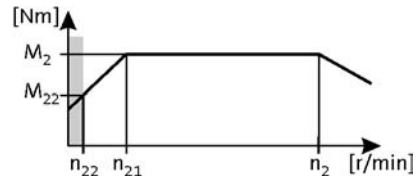
# GFL

GFL [Nm] - MF□MA

120 Hz:  $P_N = 18.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

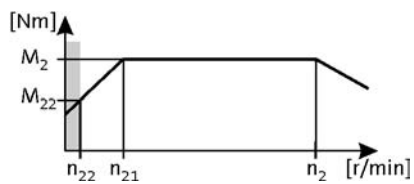
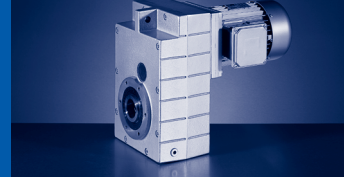
$n_1 = 148.3 \dots 3560 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 23       | 94       | - | 556     | 197      | 308   | 1.6 | 6.400  | GFL07-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 17       | 67       | - | 395     | 278      | 434   | 3.5 | 9.010  | GFL09-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 15       | 62       | - | 367     | 299      | 468   | 1.6 | 9.714  | GFL07-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 13       | 54       | - | 319     | 344      | 538   | 3.2 | 11.167 | GFL09-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 10       | 42       | - | 251     | 438      | 684   | 1.3 | 14.200 | GFL07-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 10       | 42       | - | 248     | 442      | 690   | 2.6 | 14.333 | GFL09-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 9.3      | 38       | - | 224     | 490      | 766   | 1.2 | 15.904 | GFL07-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 9.1      | 37       | - | 218     | 503      | 787   | 2.3 | 16.333 | GFL09-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 8.3      | 34       | - | 199     | 552      | 863   | 1.0 | 17.920 | GFL07-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 8.1      | 33       | - | 193     | 567      | 886   | 2.1 | 18.407 | GFL09-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 7.5      | 31       | - | 181     | 606      | 947   | 2.0 | 19.667 | GFL09-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 7.3      | 30       | - | 176     | 625      | 977   | 1.0 | 20.286 | GFL07-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 7.3      | 30       | - | 176     | 625      | 977   | 3.1 | 20.286 | GFL11-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 6.7      | 27       | - | 161     | 683      | 1067  | 1.8 | 22.164 | GFL09-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 6.5      | 26       | - | 156     | 704      | 1101  | 2.8 | 22.857 | GFL11-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 6.2      | 25       | - | 148     | 743      | 1161  | 2.0 | 24.111 | GFL09-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 6.0      | 24       | - | 143     | 766      | 1197  | 1.0 | 24.850 | GFL07-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 6.0      | 24       | - | 143     | 766      | 1197  | 3.0 | 24.850 | GFL11-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 5.5      | 22       | - | 131     | 837      | 1308  | 1.8 | 27.173 | GFL09-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 5.3      | 21       | - | 127     | 863      | 1348  | 2.7 | 28.000 | GFL11-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 4.5      | 18       | - | 109     | 1007     | 1573  | 1.6 | 32.667 | GFL09-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 4.5      | 18       | - | 109     | 1009     | 1576  | 2.5 | 32.739 | GFL11-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 4.0      | 16       | - | 97      | 1135     | 1773  | 1.5 | 36.815 | GFL09-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 4.0      | 16       | - | 97      | 1137     | 1776  | 2.2 | 36.889 | GFL11-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 3.7      | 15       | - | 90      | 1222     | 1910  | 1.4 | 39.667 | GFL09-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 3.7      | 15       | - | 90      | 1222     | 1909  | 3.2 | 39.642 | GFL14-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 3.7      | 15       | - | 89      | 1240     | 1937  | 2.1 | 40.233 | GFL11-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 3.3      | 13       | - | 80      | 1378     | 2153  | 1.2 | 44.704 | GFL09-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 3.3      | 13       | - | 80      | 1377     | 2151  | 3.2 | 44.667 | GFL14-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 3.3      | 13       | - | 79      | 1397     | 2183  | 1.9 | 45.333 | GFL11-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 2.9      | 12       | - | 68      | 1605     | 2507  | 1.8 | 52.067 | GFL11-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 2.9      | 12       | - | 68      | 1605     | 2507  | 2.6 | 52.067 | GFL14-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 2.5      | 10       | - | 61      | 1808     | 2825  | 1.6 | 58.667 | GFL11-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 2.5      | 10       | - | 61      | 1808     | 2825  | 2.6 | 58.667 | GFL14-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 2.4      | 9.5      | - | 56      | 1947     | 3043  | 1.6 | 63.190 | GFL11-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 2.4      | 9.5      | - | 56      | 1947     | 3043  | 2.2 | 63.190 | GFL14-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 2.3      | 9.3      | - | 55      | 1952     | 3049  | 1.6 | 64.296 | GFL14-3M□□□132C22 | E84AV□□□1834□□□ | 196 |
| 2.2      | 8.7      | - | 52      | 2086     | 3259  | 1.6 | 68.708 | GFL14-3M□□□132C22 | E84AV□□□1834□□□ | 196 |
| 2.1      | 8.4      | - | 50      | 2194     | 3428  | 1.5 | 71.200 | GFL11-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 2.1      | 8.4      | - | 50      | 2194     | 3428  | 2.4 | 71.200 | GFL14-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 1.9      | 7.8      | - | 46      | 2350     | 3672  | 1.6 | 77.418 | GFL14-3M□□□132C22 | E84AV□□□1834□□□ | 196 |

4



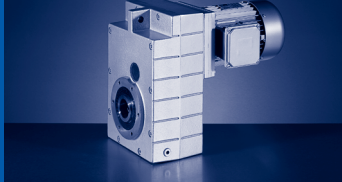


120 Hz:  $P_N = 18.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 148.3 \dots 3560 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 1.9      | 7.5      | - | 45      | 2461     | 3846  | 1.7 | 79.875  | GFL14-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 1.7      | 7.1      | - | 42      | 2581     | 4033  | 1.5 | 85.037  | GFL14-3M□□□132C22 | E84AV□□□1834□□□ | 196 |
| 1.7      | 6.7      | - | 40      | 2773     | 4334  | 1.7 | 90.000  | GFL14-2M□□□132C22 | E84AV□□□1834□□□ | 188 |
| 1.4      | 5.7      | - | 34      | 3184     | 4975  | 1.3 | 104.889 | GFL14-3M□□□132C22 | E84AV□□□1834□□□ | 196 |
| 1.3      | 5.3      | - | 31      | 3464     | 5413  | 1.2 | 114.126 | GFL14-3M□□□132C22 | E84AV□□□1834□□□ | 196 |
| 1.2      | 4.7      | - | 28      | 3903     | 6099  | 1.2 | 128.593 | GFL14-3M□□□132C22 | E84AV□□□1834□□□ | 196 |
| 1.1      | 4.4      | - | 26      | 4155     | 6492  | 1.1 | 136.889 | GFL14-3M□□□132C22 | E84AV□□□1834□□□ | 196 |
| 1.0      | 3.8      | - | 23      | 4740     | 7406  | 1.0 | 156.148 | GFL14-3M□□□132C22 | E84AV□□□1834□□□ | 196 |
| 0.9      | 3.5      | - | 21      | 5162     | 8066  | 1.0 | 170.074 | GFL14-3M□□□132C22 | E84AV□□□1834□□□ | 196 |



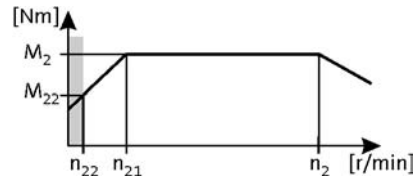
# GFL

GFL [Nm] - MF□MA

120 Hz:  $P_N = 22.00 \text{ kW}$

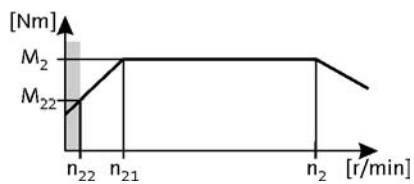
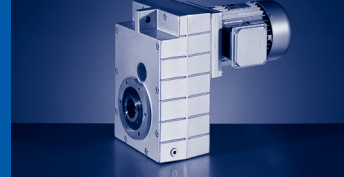
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 147.9 \dots 3550 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 16       | 67       | - | 394     | 331      | 517   | 3.0 | 9.010  | GFL09-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 15       | 61       | - | 362     | 360      | 563   | 3.0 | 9.799  | GFL09-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 14       | 56       | - | 331     | 394      | 616   | 3.2 | 10.720 | GFL11-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 13       | 54       | - | 318     | 410      | 641   | 2.7 | 11.167 | GFL09-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 10       | 42       | - | 248     | 527      | 823   | 2.2 | 14.333 | GFL09-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 9.3      | 38       | - | 223     | 585      | 913   | 3.1 | 15.904 | GFL11-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 9.1      | 37       | - | 217     | 600      | 938   | 2.0 | 16.333 | GFL09-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 8.3      | 34       | - | 198     | 659      | 1029  | 2.8 | 17.920 | GFL11-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 8.0      | 33       | - | 193     | 677      | 1057  | 1.8 | 18.407 | GFL09-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 7.5      | 31       | - | 181     | 723      | 1129  | 1.7 | 19.667 | GFL09-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 7.3      | 30       | - | 175     | 746      | 1165  | 2.6 | 20.286 | GFL11-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 6.7      | 27       | - | 160     | 815      | 1273  | 1.5 | 22.164 | GFL09-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 6.5      | 26       | - | 155     | 840      | 1313  | 2.3 | 22.857 | GFL11-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 6.1      | 25       | - | 147     | 886      | 1385  | 1.7 | 24.111 | GFL09-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 6.0      | 24       | - | 143     | 913      | 1427  | 2.6 | 24.850 | GFL11-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 5.4      | 22       | - | 131     | 999      | 1560  | 1.5 | 27.173 | GFL09-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 5.3      | 21       | - | 127     | 1029     | 1608  | 2.3 | 28.000 | GFL11-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 4.6      | 19       | - | 110     | 1189     | 1857  | 2.9 | 32.344 | GFL14-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 4.5      | 18       | - | 109     | 1201     | 1876  | 1.4 | 32.667 | GFL09-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 4.5      | 18       | - | 108     | 1203     | 1880  | 2.1 | 32.739 | GFL11-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 4.1      | 17       | - | 97      | 1339     | 2093  | 2.9 | 36.444 | GFL14-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 4.0      | 16       | - | 96      | 1353     | 2114  | 1.2 | 36.815 | GFL09-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 4.0      | 16       | - | 96      | 1356     | 2118  | 1.9 | 36.889 | GFL11-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 3.7      | 15       | - | 90      | 1458     | 2278  | 1.2 | 39.667 | GFL09-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 3.7      | 15       | - | 90      | 1457     | 2276  | 2.7 | 39.642 | GFL14-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 3.7      | 15       | - | 88      | 1479     | 2310  | 1.8 | 40.233 | GFL11-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 3.3      | 13       | - | 80      | 1642     | 2565  | 2.7 | 44.667 | GFL14-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 3.3      | 13       | - | 79      | 1643     | 2567  | 1.0 | 44.704 | GFL09-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 3.3      | 13       | - | 78      | 1666     | 2603  | 1.6 | 45.333 | GFL11-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 2.8      | 12       | - | 68      | 1913     | 2990  | 1.5 | 52.067 | GFL11-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 2.8      | 12       | - | 68      | 1913     | 2990  | 2.2 | 52.067 | GFL14-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 2.5      | 10       | - | 61      | 2156     | 3369  | 1.3 | 58.667 | GFL11-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 2.5      | 10       | - | 61      | 2156     | 3369  | 2.2 | 58.667 | GFL14-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 2.3      | 9.5      | - | 56      | 2322     | 3628  | 1.3 | 63.190 | GFL11-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 2.3      | 9.5      | - | 56      | 2322     | 3628  | 1.8 | 63.190 | GFL14-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 2.3      | 9.3      | - | 55      | 2327     | 3637  | 1.3 | 64.296 | GFL14-3M□□□132C32 | E84AV□□□2234□□□ | 196 |
| 2.2      | 8.7      | - | 52      | 2487     | 3886  | 1.3 | 68.708 | GFL14-3M□□□132C32 | E84AV□□□2234□□□ | 196 |
| 2.1      | 8.4      | - | 50      | 2617     | 4088  | 1.3 | 71.200 | GFL11-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 2.1      | 8.4      | - | 50      | 2617     | 4088  | 2.0 | 71.200 | GFL14-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 1.9      | 7.8      | - | 46      | 2802     | 4379  | 1.3 | 77.418 | GFL14-3M□□□132C32 | E84AV□□□2234□□□ | 196 |
| 1.9      | 7.5      | - | 44      | 2935     | 4587  | 1.4 | 79.875 | GFL14-2M□□□132C32 | E84AV□□□2234□□□ | 188 |

4

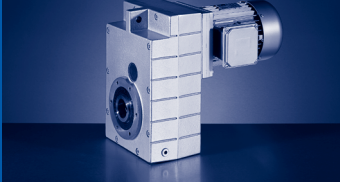


120 Hz:  $P_N = 22.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 147.9 \dots 3550 \text{ r/min}$

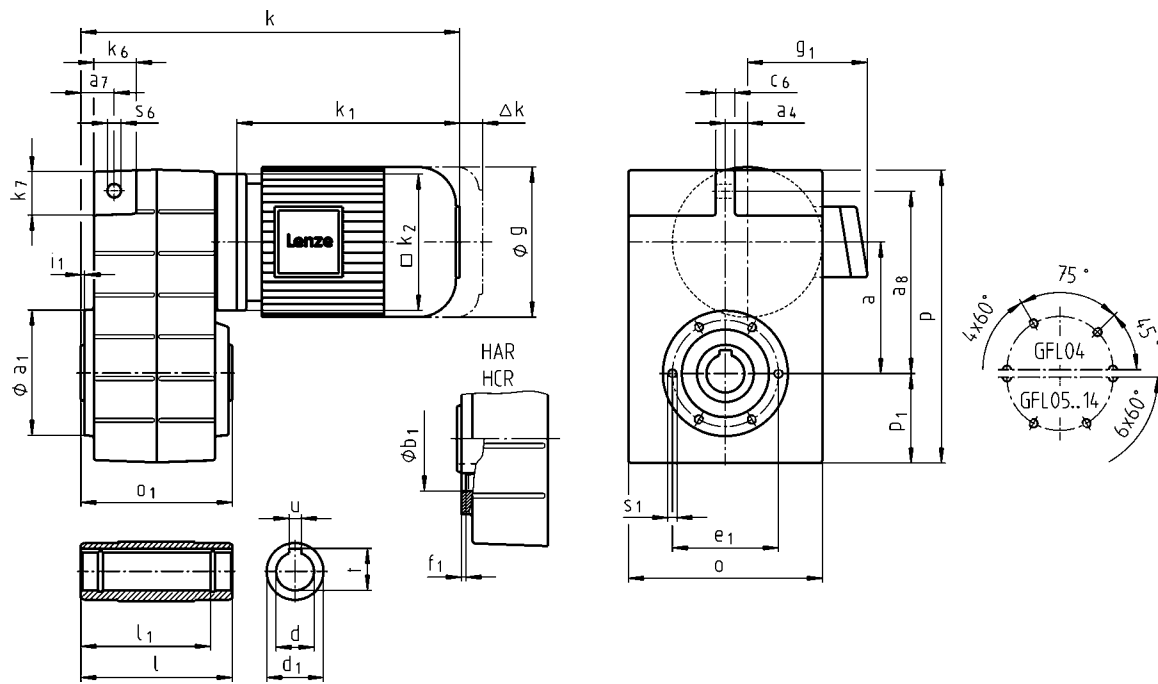
| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 1.7      | 7.1      | - | 42      | 3078     | 4810  | 1.2 | 85.037  | GFL14-3M□□□132C32 | E84AV□□□2234□□□ | 196 |
| 1.6      | 6.7      | - | 39      | 3307     | 5168  | 1.4 | 90.000  | GFL14-2M□□□132C32 | E84AV□□□2234□□□ | 188 |
| 1.4      | 5.7      | - | 34      | 3797     | 5933  | 1.1 | 104.889 | GFL14-3M□□□132C32 | E84AV□□□2234□□□ | 196 |
| 1.3      | 5.3      | - | 31      | 4131     | 6455  | 1.0 | 114.126 | GFL14-3M□□□132C32 | E84AV□□□2234□□□ | 196 |
| 1.2      | 4.7      | - | 28      | 4655     | 7273  | 1.0 | 128.593 | GFL14-3M□□□132C32 | E84AV□□□2234□□□ | 196 |



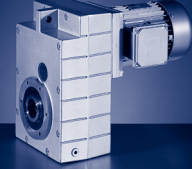
# GFL

GFL [mm] - MF□MA

## GFL□□-2M H□R



4



|                      |              | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|----------------------|--------------|------------------|------------------|------------------|--------|------------------|--------|------------------|--------|
| <b>g</b>             |              | 123              | 139              | 156              | 176    | 194              | 218    |                  | 258    |
| <b>B1</b>            | MFEMAXX      | 100              | 109              | 141              | 146    | 157              | 167    |                  | 195    |
|                      | MFEMABR      | 107              | 118              | 132              | 137    | 147              | 158    |                  | 187    |
| <b>k<sub>1</sub></b> | MFEMAXX      | 187              | 207              | 224.5            | 274    | 324              | 363    |                  | 403    |
| <b>k<sub>2</sub></b> |              | 120              |                  | 145              |        | 180              | 222    |                  | 265    |
|                      | MFEMABR      | 40               | 52               | 73               | 68     | 76               | 90     |                  | 109.5  |
| <b>Δ k</b>           | MFEMAXX      |                  |                  | 128              |        | 109              | 102    |                  | 115    |
|                      | MFEMABR      | 170              | 165              | 183              | 181    | 170              | 183    |                  | 201.5  |
| <b>k</b>             |              |                  |                  |                  |        |                  |        |                  |        |
|                      | <b>GFL04</b> | 312              | 332              | 354              |        |                  |        |                  |        |
|                      | <b>GFL05</b> | 333              | 353              | 376              | 435    | 485              |        |                  |        |
|                      | <b>GFL06</b> | 346              | 366              | 389              | 448    | 498              | 543    |                  |        |
|                      | <b>GFL07</b> |                  |                  | 422              | 481    | 531              | 576    | 624              |        |
|                      | <b>GFL09</b> |                  |                  |                  | 515    | 565              | 610    |                  | 658    |
|                      | <b>GFL11</b> |                  |                  |                  |        | 606              | 651    |                  | 699    |
|                      | <b>GFL14</b> |                  |                  |                  |        |                  | 696    |                  | 744    |

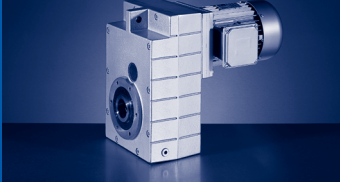
|              | a     | a <sub>4</sub> | a <sub>7</sub> | a <sub>8</sub> | c <sub>6</sub> | k <sub>6</sub> | k <sub>7</sub> | o <sup>1)</sup> | p <sup>1)</sup> | p <sub>1</sub> | s <sub>6</sub> |
|--------------|-------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|----------------|----------------|
| <b>GFL04</b> | 90.5  | 12.5           | 22.5           | 128            | 14             | 32             | 35             | 148             | 214             | 69             | 12.5           |
| <b>GFL05</b> | 112.5 | 18.5           | 29             | 155            | 16             | 35             | 38             | 165             | 252             | 78             | 14             |
| <b>GFL06</b> | 140   | 22             | 35             | 195            | 20             | 46             | 46             | 206             | 315             | 98             | 14             |
| <b>GFL07</b> | 173   | 29             | 44             | 240            | 25             | 56             | 56             | 256             | 386             | 118            | 18             |
| <b>GFL09</b> | 220   | 37.5           | 50             | 300            | 32             | 70             | 70             | 318             | 486             | 149            | 22             |
| <b>GFL11</b> | 276.5 | 50             | 65             | 375            | 40             | 84             | 90             | 395             | 600             | 181            | 26             |
| <b>GFL14</b> | 339   | 65             | 80             | 455            | 50             | 100            | 114            | 490             | 740             | 228            | 32             |

|              | d <sup>2)</sup> | d <sub>1</sub> | l   | l <sub>1</sub> | u   | t     | i <sub>1</sub> | o <sub>1</sub> | a <sub>1</sub> | b <sub>1</sub> | e <sub>1</sub> | f <sub>1</sub> | s <sub>1</sub> |
|--------------|-----------------|----------------|-----|----------------|-----|-------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | H7              |                |     |                | JS9 | +0,2  |                |                |                | H7             |                |                |                |
| <b>GFL04</b> | 25              | 45             | 115 | 100            | 8   | 28.3  | 2.5            | 115            | 110            | 75             | 90             | 3              | M6x12          |
|              | 30              | 45             | 115 | 100            | 8   | 33.3  | 2.5            | 115            |                |                |                |                |                |
| <b>GFL05</b> | 30              | 50             | 140 | 124            | 8   | 33.3  | 4              | 140            | 118            | 80             | 100            | 4              | M8x14          |
|              | 35              | 50             | 140 | 124            | 10  | 38.3  | 4              | 140            |                |                |                |                |                |
| <b>GFL06</b> | 40              | 65             | 160 | 140            | 12  | 43.3  | 5              | 160            | 140            | 100            | 120            | 4              | M10x16         |
|              | 45              | 65             | 160 | 140            | 14  | 48.8  | 5              | 160            |                |                |                |                |                |
| <b>GFL07</b> | 50              | 75             | 200 | 175            | 14  | 53.8  | 5              | 200            | 165            | 115            | 140            | 5              | M12x18         |
|              | 55              | 75             | 200 | 175            | 16  | 59.3  | 5              | 200            |                |                |                |                |                |
| <b>GFL09</b> | 60              | 95             | 240 | 210            | 18  | 64.4  | 5              | 240            | 205            | 145            | 175            | 6              | M16x24         |
|              | 70              | 95             | 240 | 210            | 20  | 74.9  | 5              | 240            |                |                |                |                |                |
| <b>GFL11</b> | 70              | 105            | 290 | 250            | 20  | 74.9  | 6              | 290            | 240            | 140            | 205            | 6              | M20x32         |
|              | 80              | 105            | 290 | 250            | 22  | 85.4  | 6              | 290            |                |                |                |                |                |
| <b>GFL14</b> | 100             | 135            | 350 | 305            | 28  | 106.4 | 7              | 350            | 290            | 170            | 250            | 6              | M24x35         |

<sup>1)</sup> k<sub>2</sub> !

<sup>2)</sup> Not suitable for through machine shaft at motor end:

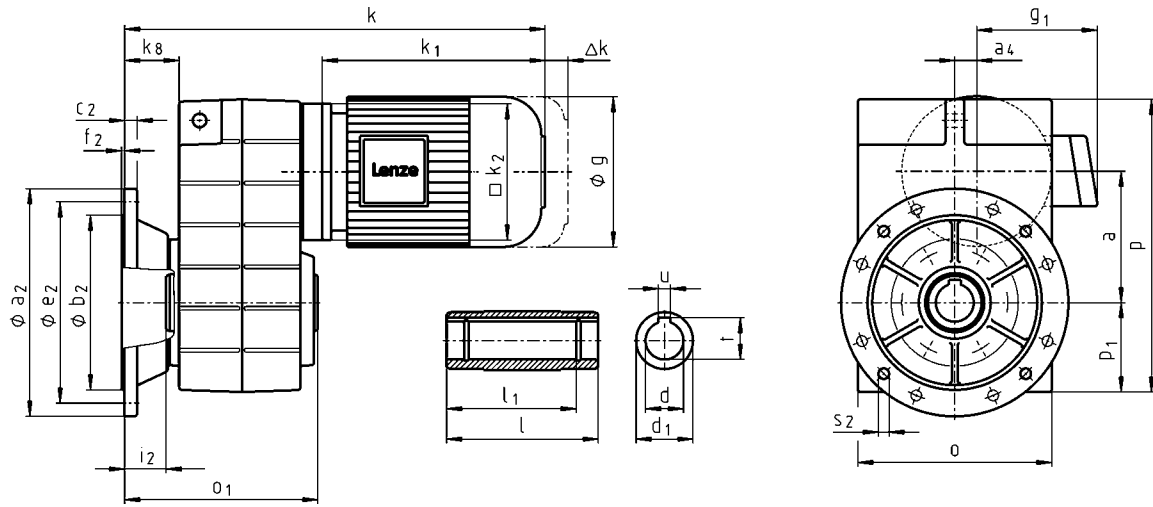
- GFL04-2M H□□ 080□□; d=30
- GFL05-2M H□□ 100□□; d=35
- GFL07-2M H□□ 160□□; d=50/55
- GFL11-2M H□□ 225□□; d=80

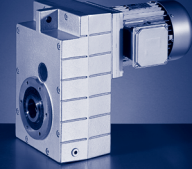


# GFL

GFL [mm] - MF□MA

## GFL□□-2M HCK





|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|----------------------|---------|------------------|------------------|------------------|--------|------------------|--------|------------------|--------|
| <b>g</b>             |         | 123              | 139              | 156              | 176    | 194              | 218    |                  | 258    |
| <b>B1</b>            | MFEMAXX | 100              | 109              | 141              | 146    | 157              | 167    |                  | 195    |
|                      | MFEMABR | 107              | 118              | 132              | 137    | 147              | 158    |                  | 187    |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              | 224.5            | 274    | 324              | 363    |                  | 403    |
| <b>k<sub>2</sub></b> |         | 120              |                  | 145              |        | 180              | 222    |                  | 265    |
|                      | MFEMABR | 40               | 52               | 73               | 68     | 76               | 90     |                  | 109.5  |
| <b>Δ k</b>           | MFFMAXX |                  |                  | 128              |        | 109              | 102    |                  | 115    |
|                      | MFFMABR | 170              | 165              | 183              | 181    | 170              | 183    |                  | 201.5  |
| <b>k</b>             |         |                  |                  |                  |        |                  |        |                  |        |
| <b>GFL04</b>         |         | 345              | 365              | 387              |        |                  |        |                  |        |
| <b>GFL05</b>         |         | 366              | 386              | 409              | 468    | 518              |        |                  |        |
| <b>GFL06</b>         |         | 387              | 407              | 430              | 489    | 539              | 584    |                  |        |
| <b>GFL07</b>         |         |                  |                  | 477              | 536    | 586              | 631    | 679              |        |
| <b>GFL09</b>         |         |                  |                  |                  | 575    | 625              | 670    |                  | 718    |
| <b>GFL11</b>         |         |                  |                  |                  |        | 666              | 711    |                  | 759    |
| <b>GFL14</b>         |         |                  |                  |                  |        |                  | 756    |                  | 804    |

|              | a     | a <sub>4</sub> | k <sub>8</sub> | o <sup>1)</sup> | p <sup>1)</sup> | P <sub>1</sub> |
|--------------|-------|----------------|----------------|-----------------|-----------------|----------------|
| <b>GFL04</b> | 90.5  | 12.5           | 41.8           | 148             | 214             | 69             |
| <b>GFL05</b> | 112.5 | 18.5           | 46             | 165             | 252             | 78             |
| <b>GFL06</b> | 140   | 22             | 55.5           | 206             | 315             | 98             |
| <b>GFL07</b> | 173   | 29             | 72.5           | 256             | 386             | 118            |
| <b>GFL09</b> | 220   | 37.5           | 77.5           | 318             | 486             | 149            |
| <b>GFL11</b> | 276.5 | 50             | 85.5           | 395             | 600             | 181            |
| <b>GFL14</b> | 339   | 65             | 89.5           | 490             | 740             | 228            |

|              | d <sup>2)</sup> | d <sub>1</sub> | l   | l <sub>1</sub> | u   | t     | i <sub>2</sub> | o <sub>1</sub> | a <sub>2</sub> | b <sub>2</sub> | c <sub>2</sub> | e <sub>2</sub> | f <sub>2</sub> | s <sub>2</sub> |
|--------------|-----------------|----------------|-----|----------------|-----|-------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | H7              |                |     |                | JS9 | +0,2  |                |                |                | j7             |                |                |                |                |
| <b>GFL04</b> | 25              | 45             | 115 | 100            | 8   | 28.3  | 33             | 148            |                |                |                |                |                |                |
|              | 30              | 45             | 115 | 100            | 8   | 33.3  | 33             | 148            | 160            | 110            | 10             | 130            | 3.5            | 4 x 9          |
| <b>GFL05</b> | 30              | 50             | 140 | 124            | 8   | 33.3  | 33             | 173            |                |                |                |                |                |                |
|              | 35              | 50             | 140 | 124            | 10  | 38.3  | 33             | 173            | 200            | 130            | 12             | 165            | 4              | 4 x 11         |
| <b>GFL06</b> | 40              | 65             | 160 | 140            | 12  | 43.3  | 42             | 201            |                |                |                |                |                |                |
|              | 45              | 65             | 160 | 140            | 14  | 48.8  | 41             | 201            | 250            | 180            | 15             | 215            | 4              | 4 x 14         |
| <b>GFL07</b> | 50              | 75             | 200 | 175            | 14  | 53.8  | 55             | 255            |                |                |                |                |                |                |
|              | 55              | 75             | 200 | 175            | 16  | 59.3  | 55             | 255            | 300            | 230            | 17             | 265            | 4              | 4 x 14         |
| <b>GFL09</b> | 60              | 95             | 240 | 210            | 18  | 64.4  | 60             | 300            |                |                |                |                |                |                |
|              | 70              | 95             | 240 | 210            | 20  | 74.9  | 60             | 300            | 350            | 250            | 18             | 300            | 4              | 4 x 17.5       |
| <b>GFL11</b> | 70              | 105            | 290 | 250            | 20  | 74.9  | 60             | 350            |                |                |                |                |                |                |
|              | 80              | 105            | 290 | 250            | 22  | 85.4  | 60             | 350            | 400            | 300            | 20             | 350            | 5              | 4 x 17.5       |
| <b>GFL14</b> |                 |                |     |                |     |       |                |                |                |                |                |                |                |                |
|              | 100             | 135            | 350 | 305            | 28  | 106.4 | 60             | 410            | 450            | 350            | 22             | 400            | 5              | 8 x 18.5       |

<sup>1)</sup> k<sub>2</sub> !

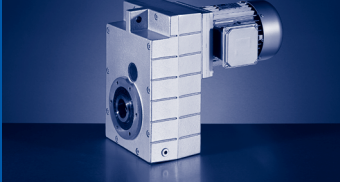
<sup>2)</sup> Not suitable for through machine shaft at motor end:

GFL04-2M H□□ 080□□; d=30

GFL05-2M H□□ 100□□; d=35

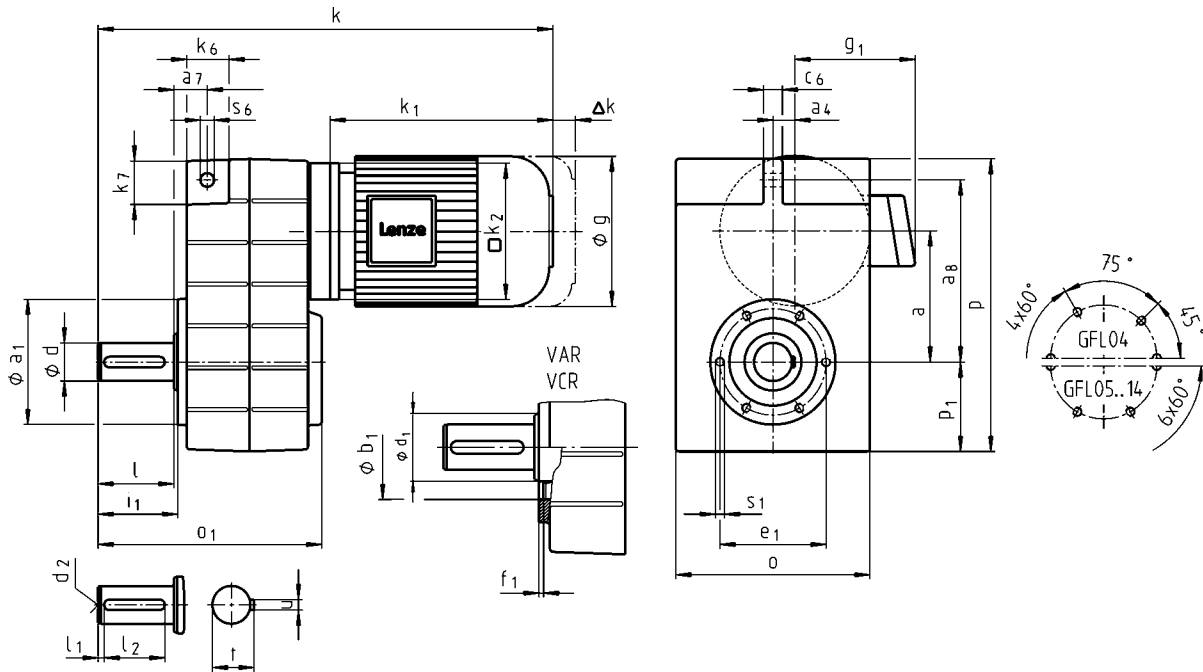
GFL07-2M H□□ 160□□; d=50/55

GFL11-2M H□□ 225□□; d=80



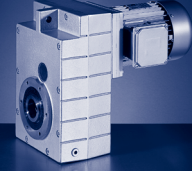
**GFL**  
GFL [mm] - MF□MA

**GFL□□-2M V□R**



4



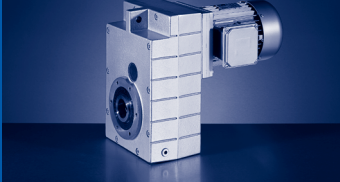


|                      |              | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|----------------------|--------------|------------------|------------------|------------------|--------|------------------|--------|------------------|--------|
| <b>g</b>             |              | 123              | 139              | 156              | 176    | 194              | 218    |                  | 258    |
| <b>B1</b>            | MFEMAXX      | 100              | 109              | 141              | 146    | 157              | 167    |                  | 195    |
|                      | MFEMABR      | 107              | 118              | 132              | 137    | 147              | 158    |                  | 187    |
| <b>k<sub>1</sub></b> | MFEMAXX      | 187              | 207              | 224.5            | 274    | 324              | 363    |                  | 403    |
| <b>k<sub>2</sub></b> |              | 120              |                  | 145              |        | 180              |        | 222              | 265    |
|                      | MFEMABR      | 40               | 52               | 73               | 68     | 76               | 90     |                  | 109.5  |
| <b>Δ k</b>           | MFFMAXX      |                  |                  | 128              |        | 109              | 102    |                  | 115    |
|                      | MFFMABR      | 170              | 165              | 183              | 181    | 170              | 183    |                  | 201.5  |
| <b>k</b>             |              |                  |                  |                  |        |                  |        |                  |        |
|                      | <b>GFL04</b> | 362              | 382              | 404              | 464    |                  |        |                  |        |
|                      | <b>GFL05</b> | 393              | 413              | 436              | 495    | 545              |        |                  |        |
|                      | <b>GFL06</b> | 426              | 446              | 469              | 528    | 578              | 623    |                  |        |
|                      | <b>GFL07</b> |                  |                  | 522              | 581    | 631              | 676    | 724              |        |
|                      | <b>GFL09</b> |                  |                  |                  | 635    | 685              | 730    |                  | 778    |
|                      | <b>GFL11</b> |                  |                  |                  |        | 766              | 811    |                  | 859    |
|                      | <b>GFL14</b> |                  |                  |                  |        |                  | 896    |                  | 944    |

|              | a     | a <sub>4</sub> | a <sub>7</sub> | a <sub>8</sub> | c <sub>6</sub> | k <sub>6</sub> | k <sub>7</sub> | o <sup>1)</sup> | p <sup>1)</sup> | p <sub>1</sub> | s <sub>6</sub> |
|--------------|-------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|----------------|----------------|
| <b>GFL04</b> | 90.5  | 12.5           | 22.5           | 128            | 14             | 32             | 35             | 148             | 214             | 69             | 12.5           |
| <b>GFL05</b> | 112.5 | 18.5           | 29             | 155            | 16             | 35             | 38             | 165             | 252             | 78             | 14             |
| <b>GFL06</b> | 140   | 22             | 35             | 195            | 20             | 46             | 46             | 206             | 315             | 98             | 14             |
| <b>GFL07</b> | 173   | 29             | 44             | 240            | 25             | 56             | 56             | 256             | 386             | 118            | 18             |
| <b>GFL09</b> | 220   | 37.5           | 50             | 300            | 32             | 70             | 70             | 318             | 486             | 149            | 22             |
| <b>GFL11</b> | 276.5 | 50             | 65             | 375            | 40             | 84             | 90             | 395             | 600             | 181            | 26             |
| <b>GFL14</b> | 339   | 65             | 80             | 455            | 50             | 100            | 114            | 490             | 740             | 228            | 32             |

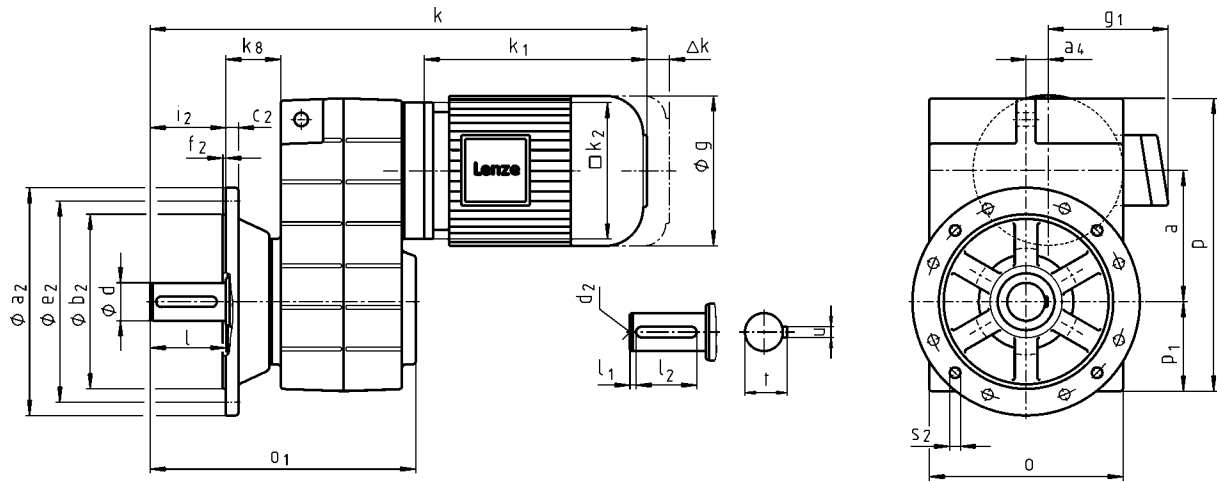
|              | d  | d   | d <sub>1</sub> | d <sub>2</sub> | l   | l <sub>1</sub> | l <sub>2</sub> | u  | t    | o <sub>1</sub> | a <sub>1</sub> | b <sub>1</sub> | e <sub>1</sub> | f <sub>1</sub> | s <sub>1</sub> |
|--------------|----|-----|----------------|----------------|-----|----------------|----------------|----|------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | k6 | m6  |                |                |     |                |                |    |      |                |                | H7             |                |                |                |
| <b>GFL04</b> | 25 |     | 45             | M10            | 50  | 6              | 40             | 8  | 28   | 162.5          | 110            | 75             | 90             | 3              | M6x12          |
| <b>GFL05</b> | 30 |     | 45             | M10            | 60  | 6              | 45             | 8  | 33   | 196.5          | 118            | 80             | 100            | 4              | M8x14          |
| <b>GFL06</b> | 40 |     | 65             | M16            | 80  | 7              | 63             | 12 | 43   | 235.5          | 140            | 100            | 120            | 4              | M10x16         |
| <b>GFL07</b> | 50 |     | 75             | M16            | 100 | 8              | 80             | 14 | 53.5 | 295.5          | 165            | 115            | 140            | 5              | M12x18         |
| <b>GFL09</b> |    | 60  | 95             | M20            | 120 | 8              | 100            | 18 | 64   | 355.5          | 205            | 145            | 175            | 6              | M16x24         |
| <b>GFL11</b> |    | 80  | 105            | M20            | 160 | 15             | 125            | 22 | 85   | 444.5          | 240            | 140            | 205            | 6              | M20x32         |
| <b>GFL14</b> |    | 100 | 135            | M24            | 200 | 18             | 160            | 28 | 106  | 543.5          | 290            | 170            | 250            | 6              | M24x35         |

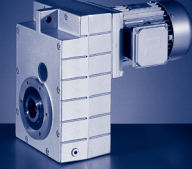
<sup>1)</sup> k<sub>2</sub> !



**GFL**  
GFL [mm] - MF□MA

**GFL□□-2M VCK**



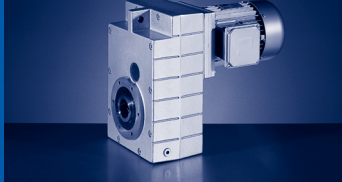


|                      |              | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|----------------------|--------------|------------------|------------------|------------------|--------|------------------|--------|------------------|--------|
| <b>g</b>             |              | 123              | 139              | 156              | 176    | 194              | 218    |                  | 258    |
| <b>B1</b>            | MFEMAXX      | 100              | 109              | 141              | 146    | 157              | 167    |                  | 195    |
|                      | MFEMABR      | 107              | 118              | 132              | 137    | 147              | 158    |                  | 187    |
| <b>k<sub>1</sub></b> | MFEMAXX      | 187              | 207              | 224.5            | 274    | 324              | 363    |                  | 403    |
| <b>k<sub>2</sub></b> |              | 120              |                  | 145              | 180    |                  | 222    |                  | 265    |
|                      | MFEMABR      | 40               | 52               | 73               | 68     | 76               | 90     |                  | 109.5  |
| <b>Δ k</b>           | MFFMAXX      | 128              |                  |                  |        | 109              | 102    |                  | 115    |
|                      | MFFMABR      | 170              | 165              | 183              | 181    | 170              | 183    |                  | 201.5  |
| <b>k</b>             |              |                  |                  |                  |        |                  |        |                  |        |
|                      | <b>GFL04</b> | 395              | 415              | 437              | 497    |                  |        |                  |        |
|                      | <b>GFL05</b> | 426              | 446              | 469              | 528    | 578              |        |                  |        |
|                      | <b>GFL06</b> | 467              | 487              | 510              | 569    | 619              | 664    |                  |        |
|                      | <b>GFL07</b> |                  |                  | 577              | 636    | 686              | 731    | 779              |        |
|                      | <b>GFL09</b> |                  |                  |                  | 695    | 745              | 790    |                  | 838    |
|                      | <b>GFL11</b> |                  |                  |                  |        | 826              | 871    |                  | 919    |
|                      | <b>GFL14</b> |                  |                  |                  |        |                  | 956    |                  | 1004   |

|              | a     | a <sub>4</sub> | k <sub>8</sub> | o <sup>1)</sup> | p <sup>1)</sup> | P <sub>1</sub> |
|--------------|-------|----------------|----------------|-----------------|-----------------|----------------|
| <b>GFL04</b> | 90.5  | 12.5           | 41.8           | 148             | 214             | 69             |
| <b>GFL05</b> | 112.5 | 18.5           | 46             | 165             | 252             | 78             |
| <b>GFL06</b> | 140   | 22             | 55.5           | 206             | 315             | 98             |
| <b>GFL07</b> | 173   | 29             | 72.5           | 256             | 386             | 118            |
| <b>GFL09</b> | 220   | 37.5           | 77.5           | 318             | 486             | 149            |
| <b>GFL11</b> | 276.5 | 50             | 85.5           | 395             | 600             | 181            |
| <b>GFL14</b> | 339   | 65             | 89.5           | 490             | 740             | 228            |

|              | d  | d   | d <sub>1</sub> | d <sub>2</sub> | l   | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i <sub>2</sub> | o <sub>1</sub> | a <sub>2</sub> | b <sub>2</sub> | c <sub>2</sub> | e <sub>2</sub> | f <sub>2</sub> | s <sub>2</sub>             |
|--------------|----|-----|----------------|----------------|-----|----------------|----------------|----|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------------------|
|              | k6 | m6  |                |                |     |                |                |    |      |                |                |                | j7             |                |                |                |                            |
| <b>GFL04</b> | 25 |     | 45             | M10            | 50  | 6              | 40             | 8  | 28   | 50             | 195.5          | 160            | 110            | 10             | 130            | 3.5            | 4 x 9                      |
| <b>GFL05</b> | 30 |     | 45             | M10            | 60  | 6              | 45             | 8  | 33   | 60             | 229.5          | 200            | 130            | 12             | 165            | 4              | 4 x 11                     |
| <b>GFL06</b> | 40 |     | 65             | M16            | 80  | 7              | 63             | 12 | 43   | 80             | 276.5          | 250            | 180            | 15             | 215            | 4              | 4 x 14                     |
| <b>GFL07</b> | 50 |     | 75             | M16            | 100 | 8              | 80             | 14 | 53.5 | 100            | 350.5          | 250<br>300     | 180<br>230     | 15<br>17       | 215<br>265     | 4<br>4         | 4 x 14<br>4 x 14           |
| <b>GFL09</b> |    | 60  | 95             | M20            | 120 | 8              | 100            | 18 | 64   | 120            | 415.5          | 350            | 250            | 18             | 300            | 4              | 4 x<br>17.5                |
| <b>GFL11</b> |    | 80  | 105            | M20            | 160 | 15             | 125            | 22 | 85   | 160            | 504.5          | 400<br>450     | 300<br>350     | 20<br>22       | 350<br>400     | 5<br>5         | 4 x<br>17.5<br>8 x<br>17.5 |
| <b>GFL14</b> |    | 100 | 135            | M24            | 200 | 18             | 160            | 28 | 106  | 200            | 603.5          | 450            | 350            | 22             | 400            | 5              | 8 x<br>18.5                |

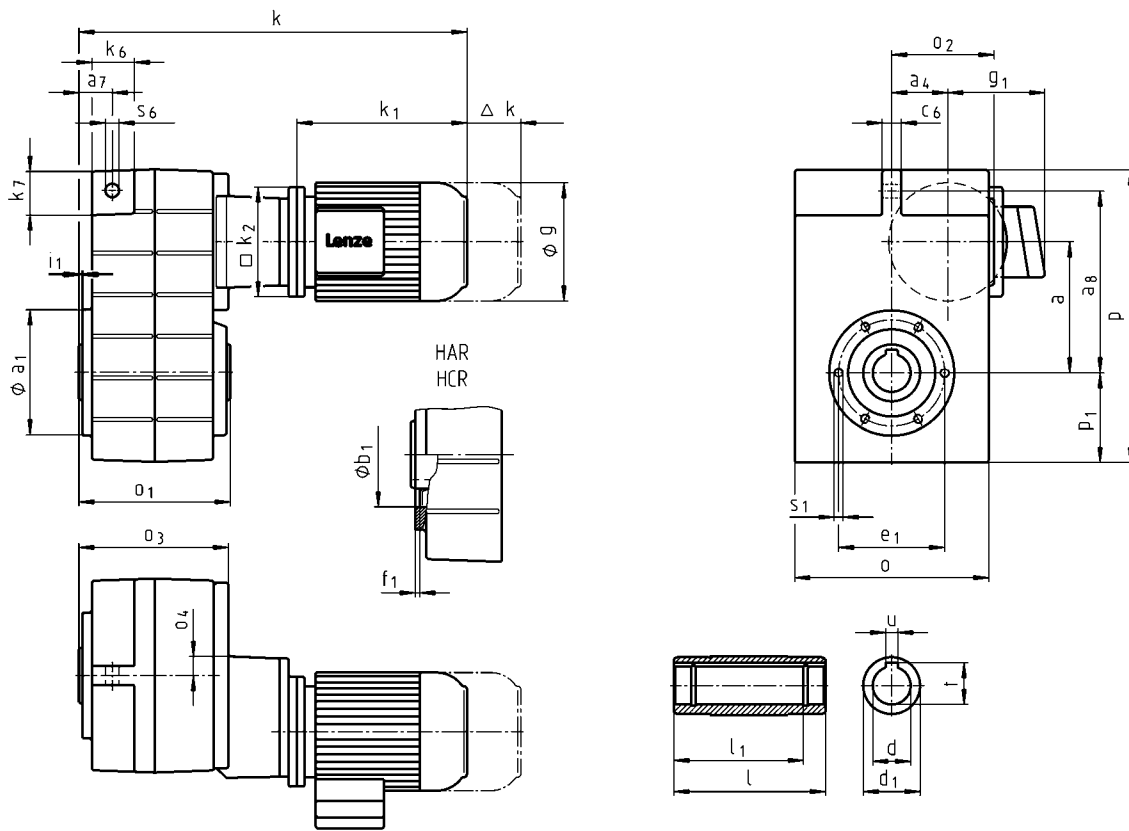
<sup>1)</sup> k<sub>2</sub> !



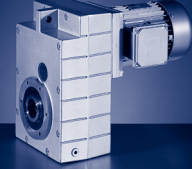
# GFL

GFL [mm] - MF□MA

## GFL□□-3M H□R



|                              |         | 063C32<br>063C42 | 071C32 | 071C42   | 080C32<br>080C42 |
|------------------------------|---------|------------------|--------|----------|------------------|
| <b>g</b>                     |         | 123              |        | 139      | 156              |
| <b>g<sub>1</sub></b>         | MFEMAXX | 100              |        | 109      | 141              |
|                              | MFEMABR | 107              |        | 118      | 132              |
| <b>k<sub>1</sub></b>         | MFEMAXX | 187              |        | 207      | 224.5            |
| <b>k<sub>2</sub></b>         |         |                  | 120    |          | 145              |
|                              | MFEMABR | 40               |        | 52       | 73               |
|                              | MFFMAXX |                  |        | 128      |                  |
| <b><math>\Delta k</math></b> | MFFMABR | 170              |        | 165      | 183              |
|                              |         |                  |        | <b>k</b> |                  |
| <b>GFL05</b>                 |         | 410              | 430    |          |                  |
| <b>GFL06</b>                 |         | 440              |        | 460      | 482              |
| <b>GFL07</b>                 |         | 484              |        | 504      | 526              |
| <b>GFL09</b>                 |         | 536              |        | 556      | 578              |
| <b>GFL11</b>                 |         |                  |        |          | 638              |

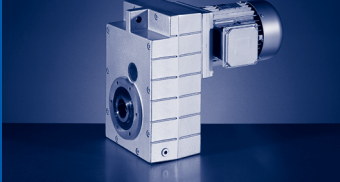


|                      |         | 090C32 | 100C12<br>100C32 | 112C22 | 132C12 | 132C22<br>132C32 |
|----------------------|---------|--------|------------------|--------|--------|------------------|
| <b>g</b>             |         | 176    | 194              | 218    |        | 258              |
| <b>B1</b>            | MFEMAXX | 146    | 157              | 167    |        | 195              |
|                      | MFEMABR | 137    | 147              | 158    |        | 187              |
| <b>k<sub>1</sub></b> | MFEMAXX | 274    | 324              | 363    |        | 403              |
| <b>k<sub>2</sub></b> |         | 180    |                  | 222    |        | 265              |
| <b>Δ k</b>           | MFEMABR | 68     | 76               | 90     |        | 109.5            |
|                      | MFFMAXX | 128    | 109              | 102    |        | 115              |
|                      | MFFMABR | 181    | 170              | 183    |        | 201.5            |
| <b>k</b>             |         |        |                  |        |        |                  |
| <b>GFL07</b>         |         | 586    |                  |        |        |                  |
| <b>GFL09</b>         |         | 638    | 688              |        |        |                  |
| <b>GFL11</b>         |         | 698    | 748              | 793    | 841    |                  |
| <b>GFL14</b>         |         | 777    | 827              | 872    |        | 920              |

|              | a     | a <sub>4</sub> | a <sub>7</sub> | a <sub>8</sub> | c <sub>6</sub> | k <sub>6</sub> | k <sub>7</sub> | o <sup>1)</sup> | o <sub>2</sub> | o <sub>3</sub> | o <sub>4</sub> | p <sup>1)</sup> | p <sub>1</sub> | s <sub>6</sub> |
|--------------|-------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|----------------|----------------|----------------|-----------------|----------------|----------------|
| <b>GFL05</b> | 112.5 | 54.5           | 29             | 155            | 16             | 35             | 38             | 165             | 106.5          | 140.5          | 22.6           | 252             | 78             | 14             |
| <b>GFL06</b> | 140   | 58             | 35             | 195            | 20             | 46             | 46             | 206             | 111            | 159.5          | 20.2           | 315             | 98             | 14             |
| <b>GFL07</b> | 173   | 74             | 44             | 240            | 25             | 56             | 56             | 256             | 135            | 199            | 24             | 386             | 118            | 18             |
| <b>GFL09</b> | 220   | 93.5           | 50             | 300            | 32             | 70             | 70             | 318             | 170            | 237.5          | 27             | 486             | 149            | 22             |
| <b>GFL11</b> | 276.5 | 120            | 65             | 375            | 40             | 84             | 90             | 395             | 216            | 284.5          | 33.5           | 600             | 181            | 26             |
| <b>GFL14</b> | 339   | 154            | 80             | 455            | 50             | 100            | 114            | 490             | 271            | 339.5          | 38             | 740             | 228            | 32             |

|              | d   | d <sub>1</sub> | l   | l <sub>1</sub> | u   | t     | i <sub>1</sub> | o <sub>1</sub> | a <sub>1</sub> | b <sub>1</sub> | e <sub>1</sub> | f <sub>1</sub> | s <sub>1</sub> |
|--------------|-----|----------------|-----|----------------|-----|-------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | H7  |                |     |                | JS9 | +0,2  |                |                |                | H7             |                |                |                |
| <b>GFL05</b> | 30  | 50             | 140 | 124            | 8   | 33.3  | 4              | 140            |                |                |                |                |                |
|              | 35  | 50             | 140 | 124            | 10  | 38.3  | 4              | 140            | 118            | 80             | 100            | 4              | M8x14          |
| <b>GFL06</b> | 40  | 65             | 160 | 140            | 12  | 43.3  | 5              | 160            |                |                |                |                |                |
|              | 45  | 65             | 160 | 140            | 14  | 48.8  | 5              | 160            | 140            | 100            | 120            | 4              | M10x16         |
| <b>GFL07</b> | 50  | 75             | 200 | 175            | 14  | 53.8  | 5              | 200            |                |                |                |                |                |
|              | 55  | 75             | 200 | 175            | 16  | 59.3  | 5              | 200            | 165            | 115            | 140            | 5              | M12x18         |
| <b>GFL09</b> | 60  | 95             | 240 | 210            | 18  | 64.4  | 5              | 240            |                |                |                |                |                |
|              | 70  | 95             | 240 | 210            | 20  | 74.9  | 5              | 240            | 205            | 145            | 175            | 6              | M16x24         |
| <b>GFL11</b> | 70  | 105            | 290 | 250            | 20  | 74.9  | 6              | 290            |                |                |                |                |                |
|              | 80  | 105            | 290 | 250            | 22  | 85.4  | 6              | 290            | 240            | 140            | 205            | 6              | M20x32         |
| <b>GFL14</b> | 100 | 135            | 350 | 305            | 28  | 106.4 | 7              | 350            | 290            | 170            | 250            | 6              | M24x35         |

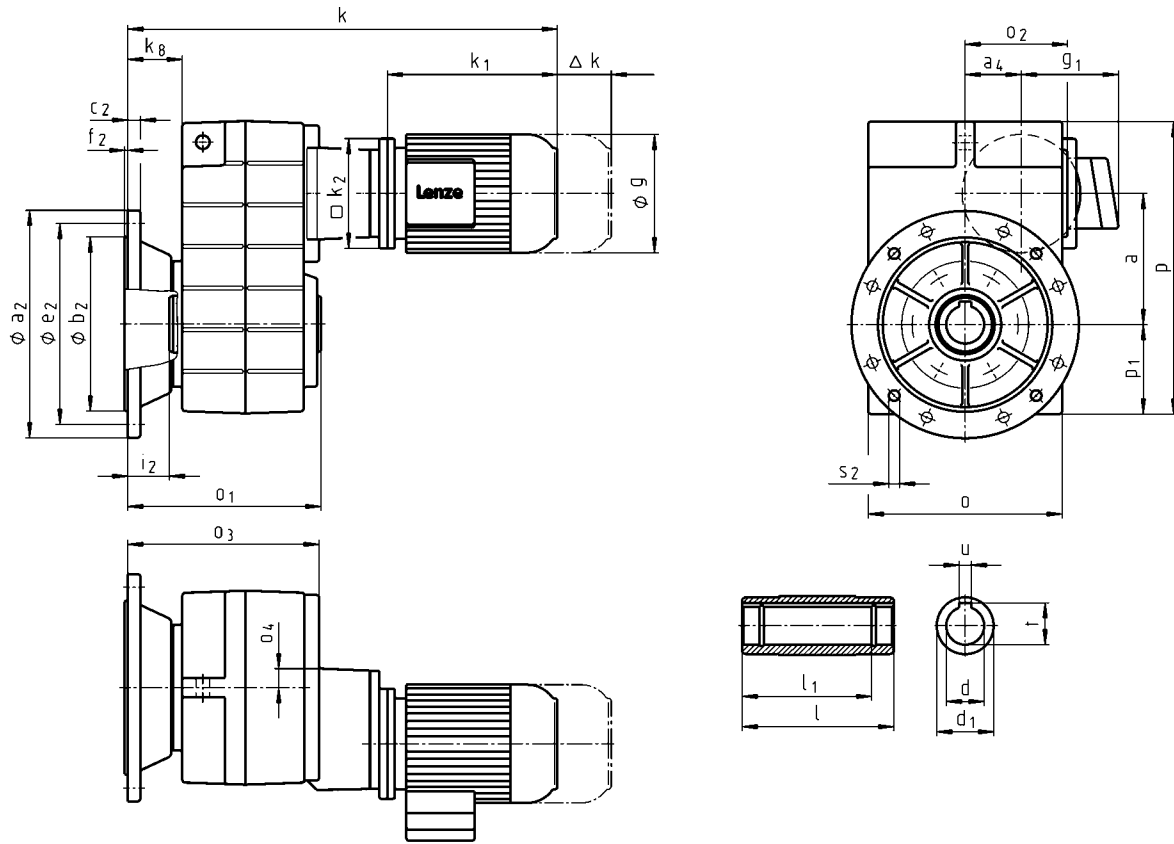
<sup>1)</sup> k<sub>2</sub> !



# GFL

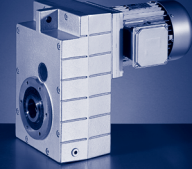
GFL [mm] - MF□MA

## GFL□□-3M HCK



4

|                              |         | 063C32<br>063C42 | 071C32 | 071C42   | 080C32<br>080C42 |
|------------------------------|---------|------------------|--------|----------|------------------|
| <b>g</b>                     |         | 123              |        | 139      | 156              |
| <b>g<sub>1</sub></b>         | MFEMAXX | 100              |        | 109      | 141              |
|                              | MFEMABR | 107              |        | 118      | 132              |
| <b>k<sub>1</sub></b>         | MFEMAXX | 187              |        | 207      | 224.5            |
| <b>k<sub>2</sub></b>         |         |                  | 120    |          | 145              |
| <b><math>\Delta k</math></b> | MFEMABR | 40               |        | 52       | 73               |
|                              | MFFMAXX |                  |        | 128      |                  |
|                              | MFFMABR | 170              |        | 165      | 183              |
|                              |         |                  |        | <b>k</b> |                  |
| <b>GFL05</b>                 |         | 443              | 463    |          |                  |
| <b>GFL06</b>                 |         | 481              |        | 501      | 523              |
| <b>GFL07</b>                 |         | 539              |        | 559      | 581              |
| <b>GFL09</b>                 |         | 596              |        | 616      | 638              |
| <b>GFL11</b>                 |         |                  |        |          | 698              |

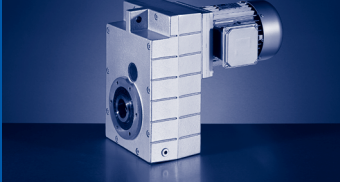


|                      |         | 090C32 | 100C12<br>100C32 | 112C22 | 132C12 | 132C22<br>132C32 |
|----------------------|---------|--------|------------------|--------|--------|------------------|
| <b>g</b>             |         | 176    | 194              | 218    |        | 258              |
| <b>B1</b>            | MFEMAXX | 146    | 157              | 167    |        | 195              |
|                      | MFEMABR | 137    | 147              | 158    |        | 187              |
| <b>k<sub>1</sub></b> | MFEMAXX | 274    | 324              | 363    |        | 403              |
| <b>k<sub>2</sub></b> |         | 180    |                  | 222    |        | 265              |
|                      | MFEMABR | 68     | 76               | 90     |        | 109.5            |
| <b>Δ k</b>           | MFFMAXX | 128    | 109              | 102    |        | 115              |
|                      | MFFMABR | 181    | 170              | 183    |        | 201.5            |
| <b>k</b>             |         |        |                  |        |        |                  |
| <b>GFL07</b>         |         | 641    |                  |        |        |                  |
| <b>GFL09</b>         |         | 698    | 748              |        |        |                  |
| <b>GFL11</b>         |         | 758    | 808              | 853    | 901    |                  |
| <b>GFL14</b>         |         | 837    | 887              | 932    |        | 980              |

|              | a     | a <sub>4</sub> | k <sub>8</sub> | o <sup>1)</sup> | o <sub>2</sub> | o <sub>3</sub> | o <sub>4</sub> | p <sup>1)</sup> | P <sub>1</sub> |
|--------------|-------|----------------|----------------|-----------------|----------------|----------------|----------------|-----------------|----------------|
| <b>GFL05</b> | 112.5 | 54.5           | 46             | 165             | 106.5          | 173.5          | 22.6           | 252             | 78             |
| <b>GFL06</b> | 140   | 58             | 55.5           | 206             | 111            | 200.5          | 20.2           | 315             | 98             |
| <b>GFL07</b> | 173   | 74             | 72.5           | 256             | 135            | 254            | 24             | 386             | 118            |
| <b>GFL09</b> | 220   | 93.5           | 77.5           | 318             | 170            | 297.5          | 27             | 486             | 149            |
| <b>GFL11</b> | 276.5 | 120            | 85.5           | 395             | 216            | 344.5          | 33.5           | 600             | 181            |
| <b>GFL14</b> | 339   | 154            | 89.5           | 490             | 271            | 399.5          | 38             | 740             | 228            |

|              | d   | d <sub>1</sub> | l   | l <sub>1</sub> | u   | t     | i <sub>2</sub> | o <sub>1</sub> | a <sub>2</sub> | b <sub>2</sub> | c <sub>2</sub> | e <sub>2</sub> | f <sub>2</sub> | s <sub>2</sub> |
|--------------|-----|----------------|-----|----------------|-----|-------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | H7  |                |     |                | JS9 | +0,2  |                |                |                | j7             |                |                |                |                |
| <b>GFL05</b> | 30  | 50             | 140 | 124            | 8   | 33.3  | 33             | 173            | 200            | 130            | 12             | 165            | 4              | 4 x 11         |
|              | 35  | 50             | 140 | 124            | 10  | 38.3  | 33             | 173            |                |                |                |                |                |                |
| <b>GFL06</b> | 40  | 65             | 160 | 140            | 12  | 43.3  | 42             | 201            | 250            | 180            | 15             | 215            | 4              | 4 x 14         |
|              | 45  | 65             | 160 | 140            | 14  | 48.8  | 41             | 201            |                |                |                |                |                |                |
| <b>GFL07</b> | 50  | 75             | 200 | 175            | 14  | 53.8  | 55             | 255            | 250            | 180            | 15             | 215            | 4              | 4 x 14         |
|              | 55  | 75             | 200 | 175            | 16  | 59.3  | 55             | 255            | 300            | 230            | 17             | 265            | 4              | 4 x 14         |
| <b>GFL09</b> | 60  | 95             | 240 | 210            | 18  | 64.4  | 60             | 300            | 350            | 250            | 18             | 300            | 4              | 4 x 17.5       |
|              | 70  | 95             | 240 | 210            | 20  | 74.9  | 60             | 300            |                |                |                |                |                |                |
| <b>GFL11</b> | 70  | 105            | 290 | 250            | 20  | 74.9  | 60             | 350            | 400            | 300            | 20             | 350            | 5              | 4 x 17.5       |
|              | 80  | 105            | 290 | 250            | 22  | 85.4  | 60             | 350            | 450            | 350            | 22             | 400            | 5              | 8 x 17.5       |
| <b>GFL14</b> | 100 | 135            | 350 | 305            | 28  | 106.4 | 60             | 410            | 450            | 350            | 22             | 400            | 5              | 8 x 18.5       |

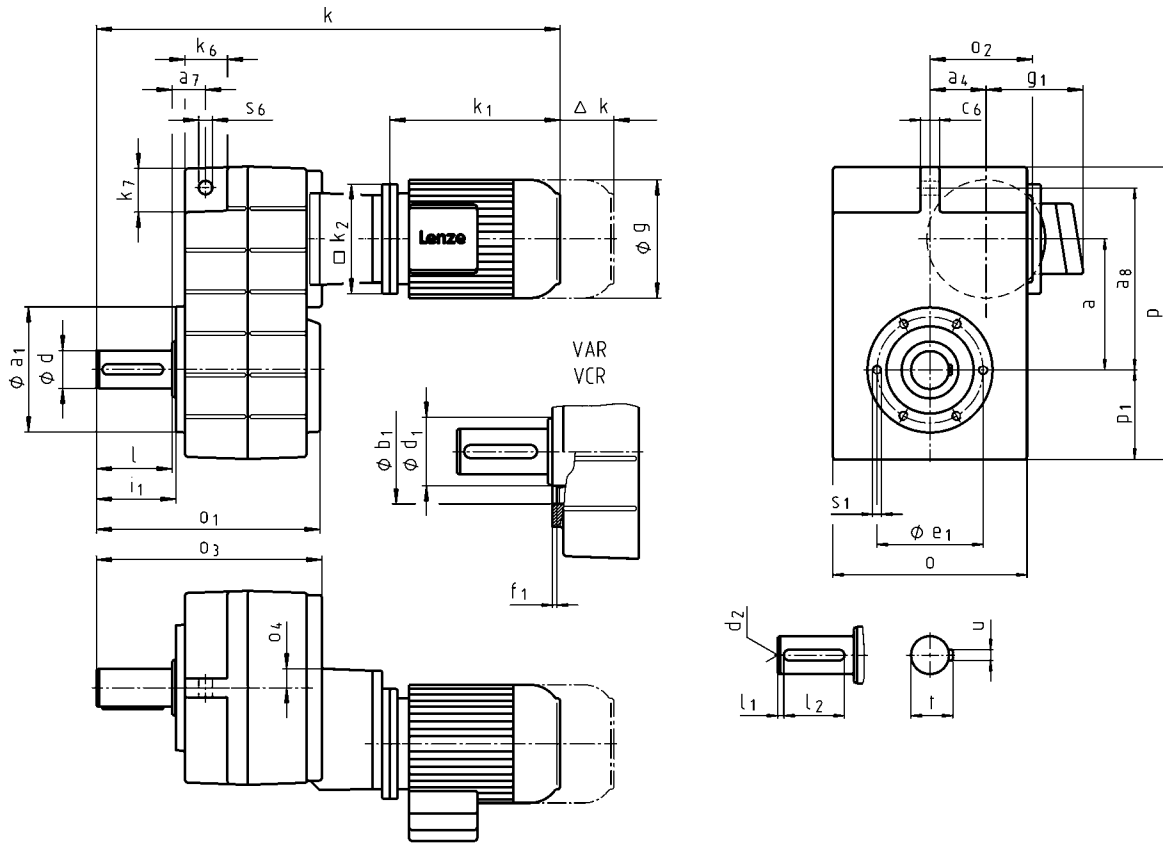
<sup>1)</sup> k<sub>2</sub> !



# GFL

GFL [mm] - MF□MA

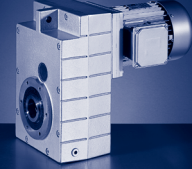
## GFL□□-3M V□R



|                      |         | 063C32<br>063C42 | 071C32 | 071C42   | 080C32<br>080C42 |
|----------------------|---------|------------------|--------|----------|------------------|
| <b>g</b>             |         | 123              |        | 139      | 156              |
| <b>B<sub>1</sub></b> | MFEMAXX | 100              |        | 109      | 141              |
|                      | MFEMABR | 107              |        | 118      | 132              |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              |        | 207      | 224.5            |
| <b>k<sub>2</sub></b> |         |                  | 120    |          | 145              |
| <b>Δ k</b>           | MFEMABR | 40               |        | 52       | 73               |
|                      | MFFMAXX |                  |        | 128      |                  |
|                      | MFFMABR | 170              |        | 165      | 183              |
|                      |         |                  |        | <b>k</b> |                  |
| <b>GFL05</b>         |         | 470              | 490    |          |                  |
| <b>GFL06</b>         |         | 520              |        | 540      | 562              |
| <b>GFL07</b>         |         | 584              |        | 604      | 626              |
| <b>GFL09</b>         |         | 656              |        | 676      | 698              |
| <b>GFL11</b>         |         |                  |        |          | 798              |

4



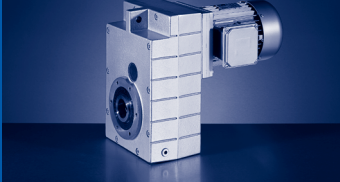


|                      |         | 090C32 | 100C12<br>100C32 | 112C22 | 132C12 | 132C22<br>132C32 |
|----------------------|---------|--------|------------------|--------|--------|------------------|
| <b>g</b>             |         | 176    | 194              | 218    |        | 258              |
| <b>B1</b>            | MFEMAXX | 146    | 157              | 167    |        | 195              |
|                      | MFEMABR | 137    | 147              | 158    |        | 187              |
| <b>k<sub>1</sub></b> | MFEMAXX | 274    | 324              | 363    |        | 403              |
| <b>k<sub>2</sub></b> |         | 180    |                  | 222    |        | 265              |
|                      | MFEMABR | 68     | 76               | 90     |        | 109.5            |
| <b>Δ k</b>           | MFFMAXX | 128    | 109              | 102    |        | 115              |
|                      | MFFMABR | 181    | 170              | 183    |        | 201.5            |
| <b>k</b>             |         |        |                  |        |        |                  |
| <b>GFL07</b>         |         | 686    |                  |        |        |                  |
| <b>GFL09</b>         |         | 758    | 808              |        |        |                  |
| <b>GFL11</b>         |         | 858    | 908              | 953    | 1001   |                  |
| <b>GFL14</b>         |         | 977    | 1027             | 1072   |        | 1120             |

|              | a     | a <sub>4</sub> | a <sub>7</sub> | a <sub>8</sub> | c <sub>6</sub> | k <sub>6</sub> | k <sub>7</sub> | o <sup>1)</sup> | o <sub>2</sub> | o <sub>3</sub> | o <sub>4</sub> | p <sup>1)</sup> | p <sub>1</sub> | s <sub>6</sub> |
|--------------|-------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|----------------|----------------|----------------|-----------------|----------------|----------------|
| <b>GFL05</b> | 112.5 | 54.5           | 29             | 155            | 16             | 35             | 38             | 165             | 106.5          | 200.5          | 22.6           | 252             | 78             | 14             |
| <b>GFL06</b> | 140   | 58             | 35             | 195            | 20             | 46             | 46             | 206             | 111            | 239.5          | 20.2           | 315             | 98             | 14             |
| <b>GFL07</b> | 173   | 74             | 44             | 240            | 25             | 56             | 56             | 256             | 135            | 299            | 24             | 386             | 118            | 18             |
| <b>GFL09</b> | 220   | 93.5           | 50             | 300            | 32             | 70             | 70             | 318             | 170            | 357.5          | 27             | 486             | 149            | 22             |
| <b>GFL11</b> | 276.5 | 120            | 65             | 375            | 40             | 84             | 90             | 395             | 216            | 444.5          | 33.5           | 600             | 181            | 26             |
| <b>GFL14</b> | 339   | 154            | 80             | 455            | 50             | 100            | 114            | 490             | 271            | 539.5          | 38             | 740             | 228            | 32             |

|              | d  | d   | d <sub>1</sub> | d <sub>2</sub> | l   | l <sub>1</sub> | l <sub>2</sub> | u  | t    | o <sub>1</sub> | a <sub>1</sub> | b <sub>1</sub> | e <sub>1</sub> | f <sub>1</sub> | s <sub>1</sub> |
|--------------|----|-----|----------------|----------------|-----|----------------|----------------|----|------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | k6 | m6  |                |                |     |                |                |    |      |                |                | H7             |                |                |                |
| <b>GFL05</b> | 30 |     | 45             | M10            | 60  | 6              | 45             | 8  | 33   | 196.5          | 118            | 80             | 100            | 4              | M8x14          |
| <b>GFL06</b> | 40 |     | 65             | M16            | 80  | 7              | 63             | 12 | 43   | 235.5          | 140            | 100            | 120            | 4              | M10x16         |
| <b>GFL07</b> | 50 |     | 75             | M16            | 100 | 8              | 80             | 14 | 53.5 | 295.5          | 165            | 115            | 140            | 5              | M12x18         |
| <b>GFL09</b> |    | 60  | 95             | M20            | 120 | 8              | 100            | 18 | 64   | 355.5          | 205            | 145            | 175            | 6              | M16x24         |
| <b>GFL11</b> |    | 80  | 105            | M20            | 160 | 15             | 125            | 22 | 85   | 444.5          | 240            | 140            | 205            | 6              | M20x32         |
| <b>GFL14</b> |    | 100 | 135            | M24            | 200 | 18             | 160            | 28 | 106  | 543.5          | 290            | 170            | 250            | 6              | M24x35         |

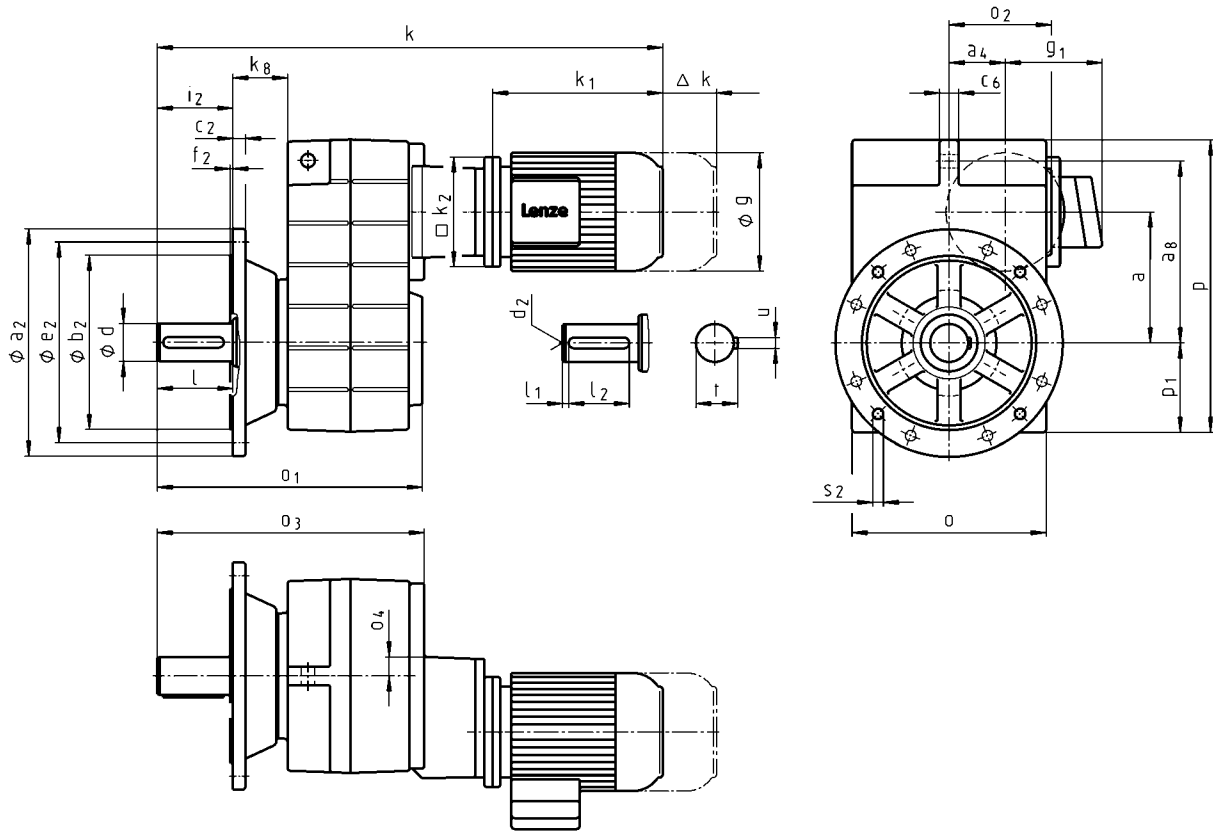
<sup>1)</sup> k<sub>2</sub> !



# GFL

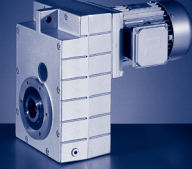
GFL [mm] - MF□MA

## GFL□□-3M VCK



4

|                      | 063C32<br>063C42 | 071C32 | 071C42   | 080C32<br>080C42 |
|----------------------|------------------|--------|----------|------------------|
| <b>g</b>             | 123              |        | 139      | 156              |
| <b>β<sub>1</sub></b> | MFEMAXX          |        | 109      | 141              |
|                      | MFEMABR          |        | 118      | 132              |
| <b>k<sub>1</sub></b> | MFEMAXX          |        | 207      | 224.5            |
| <b>k<sub>2</sub></b> |                  | 120    |          | 145              |
|                      | MFEMABR          | 40     | 52       | 73               |
| <b>Δ k</b>           | MFFMAXX          |        | 128      |                  |
|                      | MFFMABR          | 170    | 165      | 183              |
|                      |                  |        | <b>k</b> |                  |
| <b>GFL05</b>         | 503              | 523    |          |                  |
| <b>GFL06</b>         | 561              |        | 581      | 603              |
| <b>GFL07</b>         | 639              |        | 659      | 681              |
| <b>GFL09</b>         | 716              |        | 736      | 758              |
| <b>GFL11</b>         |                  |        |          | 858              |

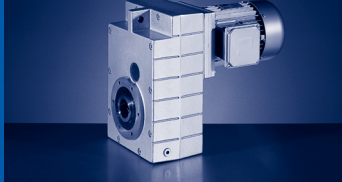


|                      |         | 090C32 | 100C12<br>100C32 | 112C22 | 132C12 | 132C22<br>132C32 |
|----------------------|---------|--------|------------------|--------|--------|------------------|
| <b>g</b>             |         | 176    | 194              | 218    |        | 258              |
| <b>B1</b>            | MFEMAXX | 146    | 157              | 167    |        | 195              |
|                      | MFEMABR | 137    | 147              | 158    |        | 187              |
| <b>k<sub>1</sub></b> | MFEMAXX | 274    | 324              | 363    |        | 403              |
| <b>k<sub>2</sub></b> |         | 180    |                  | 222    |        | 265              |
|                      | MFEMABR | 68     | 76               | 90     |        | 109.5            |
| <b>Δ k</b>           | MFFMAXX | 128    | 109              | 102    |        | 115              |
|                      | MFFMABR | 181    | 170              | 183    |        | 201.5            |
| <b>k</b>             |         |        |                  |        |        |                  |
| <b>GFL07</b>         |         | 741    |                  |        |        |                  |
| <b>GFL09</b>         |         | 818    | 868              |        |        |                  |
| <b>GFL11</b>         |         | 918    | 968              | 1013   | 1061   |                  |
| <b>GFL14</b>         |         | 1037   | 1087             | 1132   |        | 1180             |

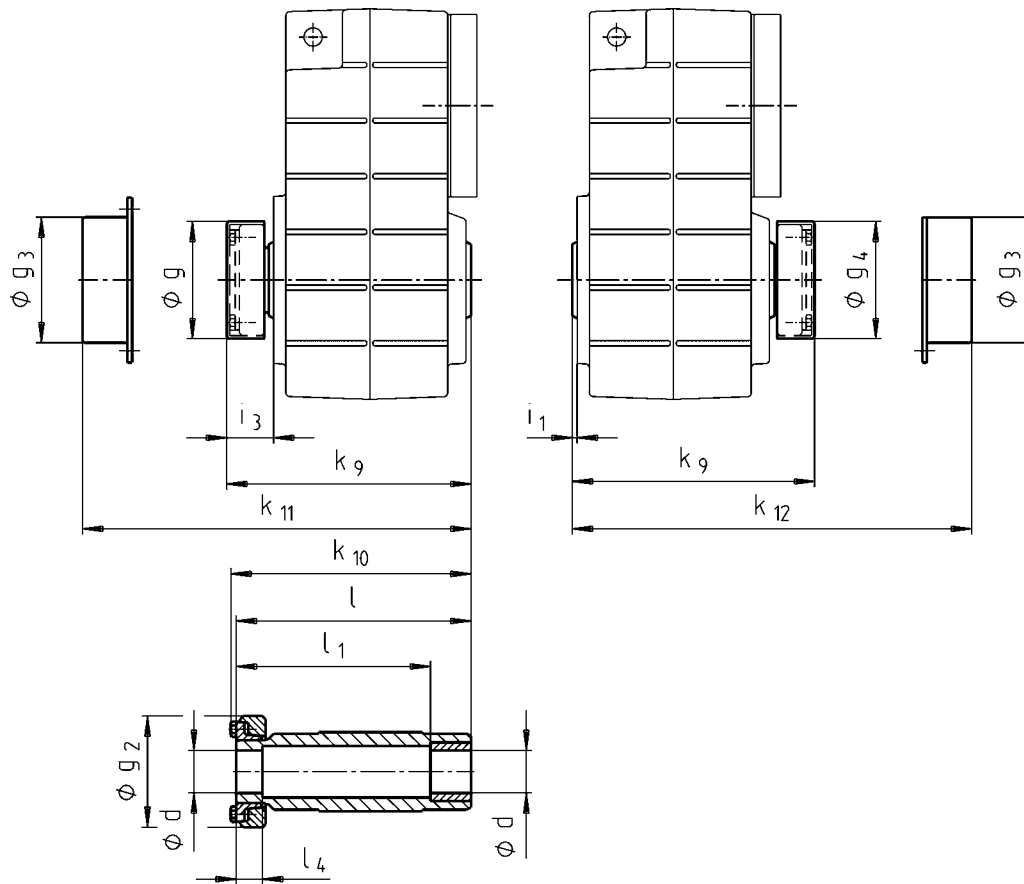
|              | a     | a <sub>4</sub> | k <sub>8</sub> | o <sup>1)</sup> | o <sub>2</sub> | o <sub>3</sub> | o <sub>4</sub> | p <sup>1)</sup> | p <sub>1</sub> |
|--------------|-------|----------------|----------------|-----------------|----------------|----------------|----------------|-----------------|----------------|
| <b>GFL05</b> | 112.5 | 54.5           | 46             | 165             | 106.5          | 233.5          | 22.6           | 252             | 78             |
| <b>GFL06</b> | 140   | 58             | 55.5           | 206             | 111            | 280.5          | 20.2           | 315             | 98             |
| <b>GFL07</b> | 173   | 74             | 72.5           | 256             | 135            | 354            | 24             | 386             | 118            |
| <b>GFL09</b> | 220   | 93.5           | 77.5           | 318             | 170            | 417.5          | 27             | 486             | 149            |
| <b>GFL11</b> | 276.5 | 120            | 85.5           | 395             | 216            | 504.5          | 33.5           | 600             | 181            |
| <b>GFL14</b> | 339   | 154            | 89.5           | 490             | 271            | 599.5          | 38             | 740             | 228            |

|              | d  | d   | d <sub>1</sub> | d <sub>2</sub> | l   | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i <sub>2</sub> | o <sub>1</sub> | a <sub>2</sub> | b <sub>2</sub> | c <sub>2</sub> | e <sub>2</sub> | f <sub>2</sub> | s <sub>2</sub>             |
|--------------|----|-----|----------------|----------------|-----|----------------|----------------|----|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------------------|
|              | k6 | m6  |                |                |     |                |                |    |      |                |                |                | j7             |                |                |                |                            |
| <b>GFL05</b> | 30 |     | 45             | M10            | 60  | 6              | 45             | 8  | 33   | 60             | 229.5          | 200            | 130            | 12             | 165            | 4              | 4 x 11                     |
| <b>GFL06</b> | 40 |     | 65             | M16            | 80  | 7              | 63             | 12 | 43   | 80             | 276.5          | 250            | 180            | 15             | 215            | 4              | 4 x 14                     |
| <b>GFL07</b> | 50 |     | 75             | M16            | 100 | 8              | 80             | 14 | 53.5 | 100            | 350.5          | 250<br>300     | 180<br>230     | 15<br>17       | 215<br>265     | 4<br>4         | 4 x 14<br>4 x 14           |
| <b>GFL09</b> |    | 60  | 95             | M20            | 120 | 8              | 100            | 18 | 64   | 120            | 415.5          | 350            | 250            | 18             | 300            | 4              | 4 x<br>17.5                |
| <b>GFL11</b> |    | 80  | 105            | M20            | 160 | 15             | 125            | 22 | 85   | 160            | 504.5          | 400<br>450     | 300<br>350     | 20<br>22       | 350<br>400     | 5<br>5         | 4 x<br>17.5<br>8 x<br>17.5 |
| <b>GFL14</b> |    | 100 | 135            | M24            | 200 | 18             | 160            | 28 | 106  | 200            | 603.5          | 450            | 350            | 22             | 400            | 5              | 8 x<br>18.5                |

<sup>1)</sup> k<sub>2</sub> !



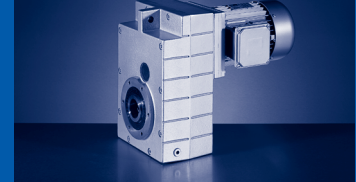
**Hollow shaft with shrink disc**



|              | d <sup>1)</sup> | g <sub>2</sub> | g <sub>3</sub> | g <sub>4</sub> | i <sub>1</sub> | k <sub>9</sub> | k <sub>10</sub> | k <sub>11</sub> | k <sub>12</sub> | l   | l <sub>1</sub> | l <sub>4</sub> |
|--------------|-----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----|----------------|----------------|
|              | h6              |                |                |                |                |                |                 |                 |                 |     |                |                |
| <b>GFL04</b> | 25<br>30        | 72             | 79             | 76             | 2.5            | 150            | 148             | 154             | 154             | 142 | 122            | 26             |
| <b>GFL04</b> | 25<br>30        | 72             | 79             | 76             | 2.5            | 150            | 148             | 154             | 154             | 142 | 122            | 26             |
| <b>GFL05</b> | 35              | 80             | 90             | 84             | 4.0            | 176            | 174             | 179             | 180             | 168 | 148            | 28             |
| <b>GFL06</b> | 40              | 90             | 100            | 94             | 5.0            | 202            | 200             | 204             | 205             | 194 | 164            | 30             |
| <b>GFL07</b> | 50              | 110            | 124            | 116            | 5.0            | 241            | 238             | 244             | 245             | 232 | 192            | 26             |
| <b>GFL09</b> | 65              | 141            | 159            | 147            | 5.0            | 288            | 285             | 287             | 288             | 278 | 228            | 30             |
| <b>GFL11</b> | 80              | 170            | 191            | 176            | 6.0            | 347            | 344             | 349             | 350             | 338 | 238            | 42             |
| <b>GFL14</b> | 100             | 215            | 253            | 221            | 7.0            | 418            | 415             | 421             | 422             | 407 | 307            | 55             |

<sup>1)</sup> Machine shaft design.

- ▶ Output flange and hollow shaft with shrink disc (design S□K) is only possible with shrink disc in position 1.
- ▶ Not suitable for through machine shaft at motor end:  
 GFL04-2M S□□ 080C□□; d=30  
 GFL05-2M S□□ 100C□□; d=35  
 GFL07-2M S□□ 160C□□; d=50/55  
 GFL11-2M S□□ 225C□□; d=80



- ▶ Ensure that the strength of the machine shaft material is adequate in shrink disc designs.  
When using typical steels (e.g. C45, 42CrMo4), the torques listed in the selection tables can be used without restriction. Please consult us if you wish to use material that is considerably weaker. Medium surface roughness Rz must not exceed 15 µm (machining is sufficient).

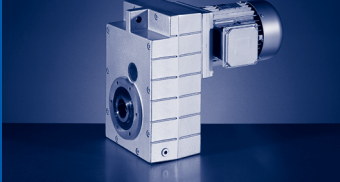
#### Combination options with shrink disc in position 1 (drive end)

##### GFL□□-2M

| Gearbox | Motor frame size  |
|---------|---|
| GFL04   |   |
| GFL05   | 063 <sup>1)</sup><br>071 <sup>1)</sup>                      |
| GFL06   | 063<br>071<br>080<br>090 <sup>1)</sup><br>100 <sup>1)</sup> |
| GFL07   | 080<br>090<br>100<br>112 <sup>1)</sup>                      |
| GFL09   | 090<br>100<br>112<br>132                                    |
| GFL11   | 100<br>112<br>132<br>160<br>180<br>225                      |
| GFL14   | 112<br>132<br>160<br>180<br>225                             |

<sup>1)</sup> Only possible without cover

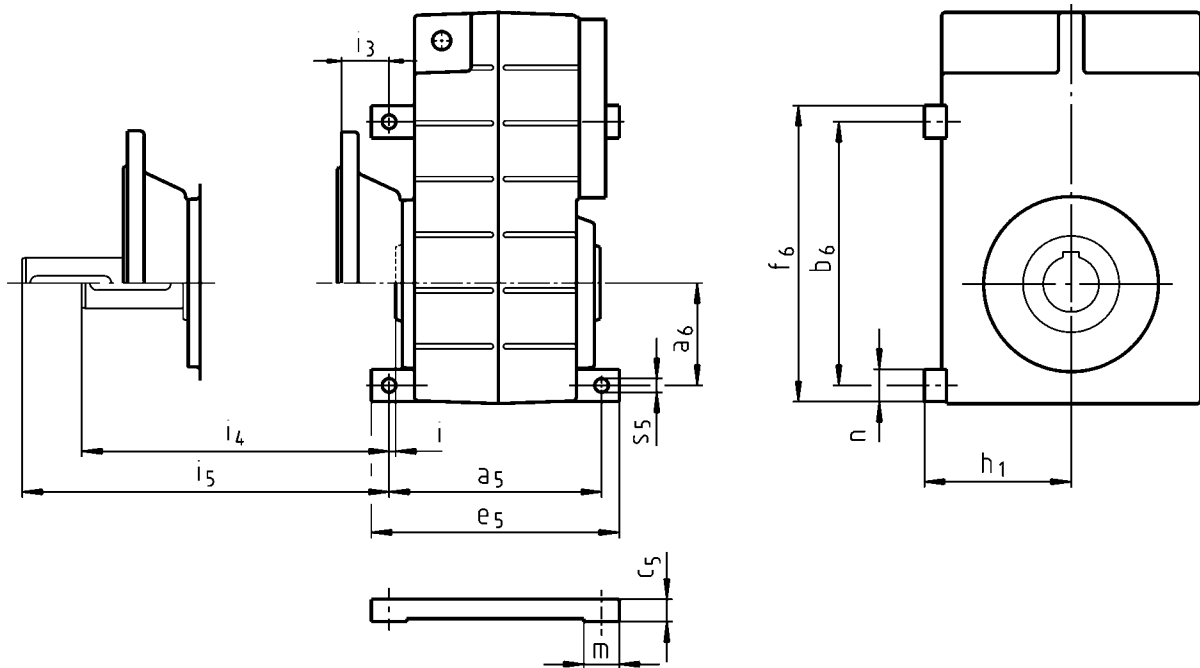
- ▶ For geared motors GFL□□-2M/E S... with shrink disc position 1: terminal box position / motec position 4 not possible!



# GFL

GFL & [mm] - Additional dimensions

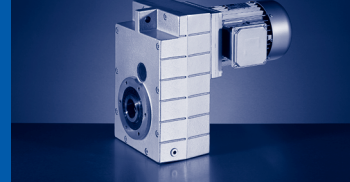
## Foot mounting in position 3



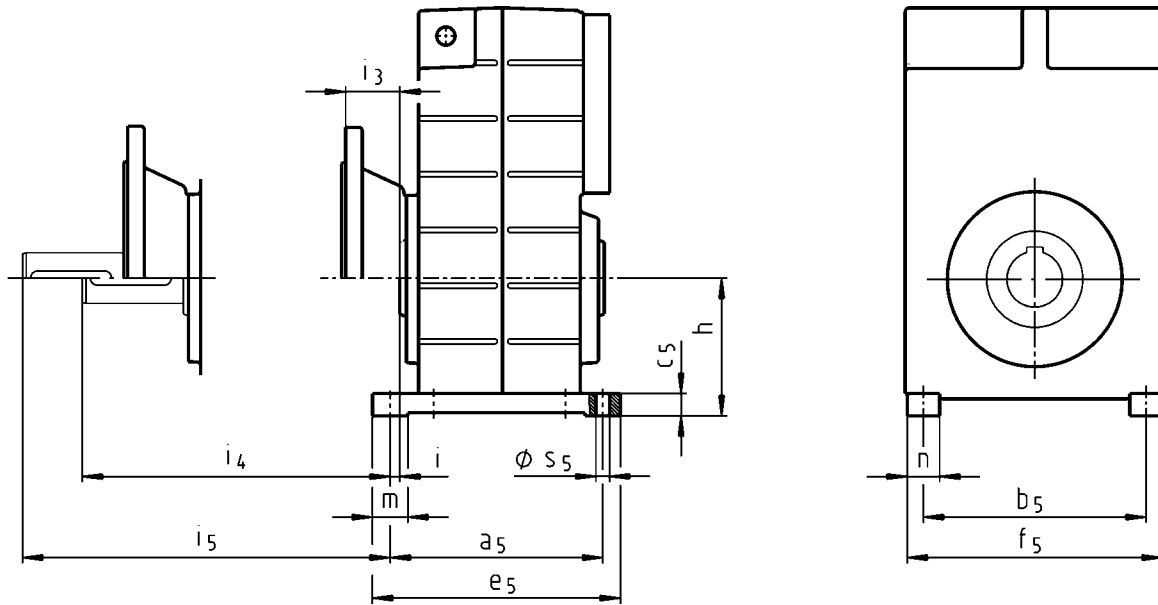
|              | a <sub>5</sub> | a <sub>6</sub> | b <sub>6</sub> | c <sub>5</sub> | e <sub>5</sub> | f <sub>6</sub> | h <sub>1</sub> | i    | i <sub>3</sub> | i <sub>4</sub> | i <sub>5</sub> | m   | n  | s <sub>5</sub> |      |
|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------|----------------|----------------|----------------|-----|----|----------------|------|
| <b>GFL04</b> | 130            | 47             | 115            | 18             | 152            | 140            | 90             | 4.5  | 28.5           | 45.5           | 78.5           | 22  | 25 | 6.6            |      |
| <b>GFL05</b> | 160            | 65             | 167            | 21             | 185            | 192            | 100            | 2.0  | 31.0           | 58.0           | 91.0           | 25  |    | 9.0            |      |
| <b>GFL06</b> | 175            | 80             | 205            | 27             | 205            | 233            | 125            |      | 3.0            | 39.0           | 78.0           | 119 | 30 | 28             | 11.0 |
| <b>GFL07</b> | 220            | 100            | 260            | 31             | 255            | 292            | 155            | 52.0 |                | 97.0           | 152            | 35  | 32 | 13.5           |      |
| <b>GFL09</b> | 260            | 125            | 335            | 36             | 300            | 375            | 190            | 57.0 |                |                | 117            | 177 | 40 | 40             | 17.5 |
| <b>GFL11</b> | 315            | 155            | 435            | 48             | 365            | 485            | 240            |      |                | 157            | 217            | 50  | 50 | 22.0           |      |
| <b>GFL14</b> | 375            | 200            | 540            | 57             | 430            | 600            | 295            |      |                | 197            | 257            | 55  | 60 | 26.0           |      |

The following versions are not possible with feet:

- ▶ GFL04: Motor size 090
- ▶ GFL05: Motor size 090

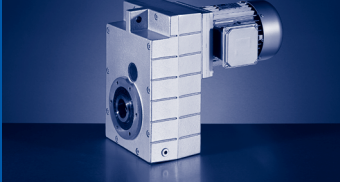


Foot mounting in position 4

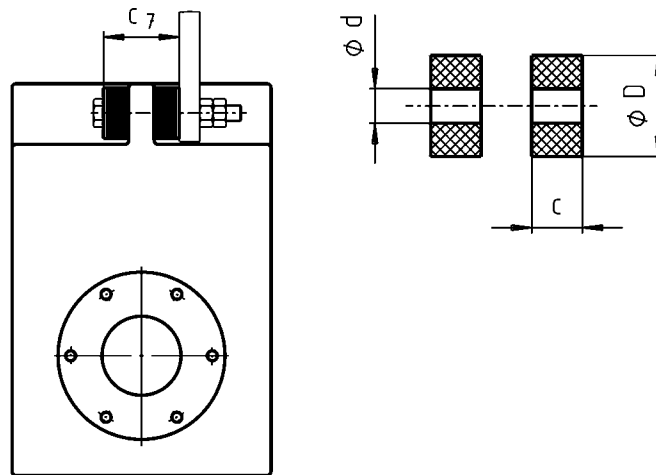


|       | a <sub>5</sub> | b <sub>5</sub> | c <sub>5</sub> | e <sub>5</sub> | f <sub>5</sub> | h   | i    | i <sub>3</sub> | i <sub>4</sub> | i <sub>5</sub> | m    | n  | s <sub>5</sub> |
|-------|----------------|----------------|----------------|----------------|----------------|-----|------|----------------|----------------|----------------|------|----|----------------|
| GFL04 | 130            | 108            | 18             | 152            | 133.0          | 85  | 4.5  | 28.5           | 45.5           | 78.5           | 22   | 25 | 6.6            |
| GFL05 | 160            | 140            | 21             | 185            | 165.0          | 95  | 2.0  | 31.0           | 58.0           | 91.0           | 25   |    | 9.0            |
| GFL06 | 175            | 175            | 27             | 205            | 203.0          | 120 |      | 3.0            | 39.0           | 78.0           | 119  | 30 | 28             |
| GFL07 | 220            | 220            | 31             | 255            | 252.0          | 145 | 52.0 |                | 97.0           | 152            | 35   | 32 | 13.5           |
| GFL09 | 260            | 275            | 36             | 300            | 315.0          | 180 | 57.0 |                | 117            | 177            | 40   | 40 | 17.5           |
| GFL11 | 315            | 340            | 48             | 365            | 390.0          | 224 |      |                | 157            | 217            | 50   | 50 | 22.0           |
| GFL14 | 375            | 425            | 57             | 430            | 485.0          | 278 | 197  | 257            | 55             | 60             | 26.0 |    |                |

► In mounting positions E and F, the oil check bore hole/oil-sight glass are located between the feet in position 4!



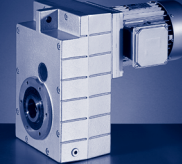
**Rubber buffer for torque plate**



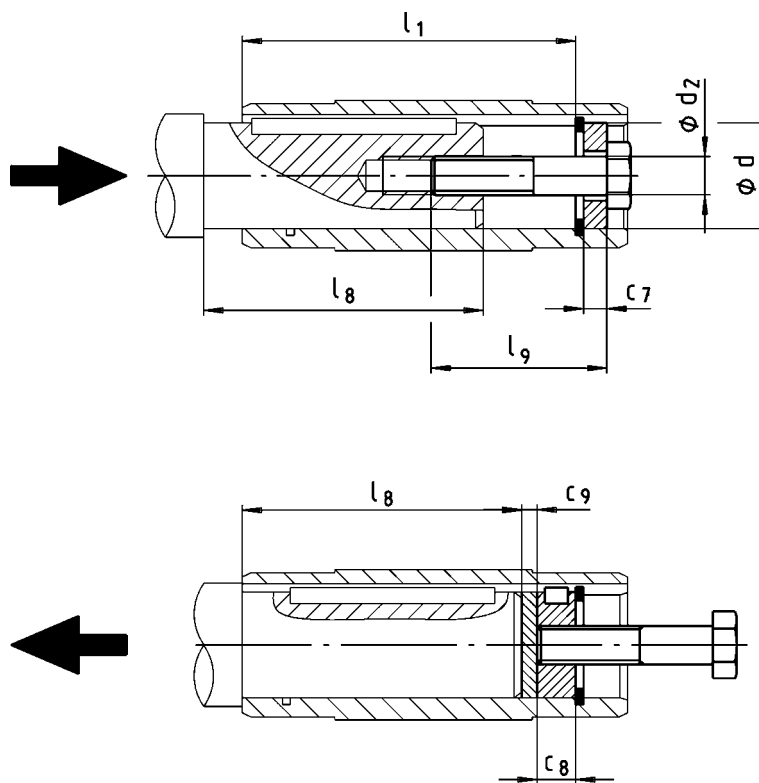
|              | d  | D  | c    | c <sub>7</sub> |
|--------------|----|----|------|----------------|
| <b>GFL04</b> | 11 | 30 | 14.5 | 43             |
| <b>GFL05</b> | 11 | 30 | 14.5 | 45             |
| <b>GFL06</b> | 13 | 40 | 15.0 | 50             |
| <b>GFL07</b> | 17 | 50 | 27.0 | 79             |
| <b>GFL09</b> | 21 | 60 | 28.0 | 88             |
| <b>GFL11</b> | 26 | 72 | 29.0 | 98             |
| <b>GFL14</b> | 33 | 92 | 30.0 | 110            |

4



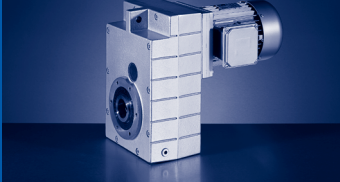


Mounting set for hollow shaft circlip - Proposed design for auxiliary tools



4

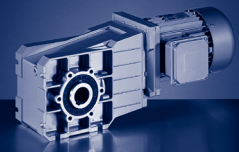
|       | d   | l <sub>1</sub> | d <sub>2</sub> | l <sub>9</sub> | c <sub>7</sub> | c <sub>8</sub> | c <sub>9</sub> | l <sub>8, max</sub> |
|-------|-----|----------------|----------------|----------------|----------------|----------------|----------------|---------------------|
|       | H7  |                |                |                |                |                |                |                     |
| GFL04 | 25  | 100            | M10            | 40             | 5              | 10             | 3              | 85                  |
|       | 30  |                |                |                | 6              |                |                |                     |
| GFL05 | 30  | 124            | M12            | 50             | 7              | 12             | 4              | 107                 |
|       | 35  |                |                |                | 8              |                |                |                     |
| GFL06 | 40  | 140            | M16            | 60             | 9              | 16             | 5              | 118                 |
|       | 45  |                |                |                | 10             |                |                |                     |
| GFL07 | 50  | 175            | M20            | 80             | 11             | 20             | 6              | 148                 |
|       | 55  |                |                |                | 13             |                |                |                     |
| GFL09 | 60  | 210            | M20            | 80             | 14             | 20             | 8              | 182                 |
|       | 70  |                |                |                | 16             |                |                |                     |
| GFL11 | 70  | 250            | M24            | 100            | 20             | 24             | 8              | 221                 |
|       | 80  |                |                |                | 20             |                |                |                     |
| GFL14 | 100 | 305            | M24            | 100            | 20             | 24             | 8              | 270                 |



## GFL

GFL & [mm] - Additional dimensions

4



## Permissible radial and axial forces at output

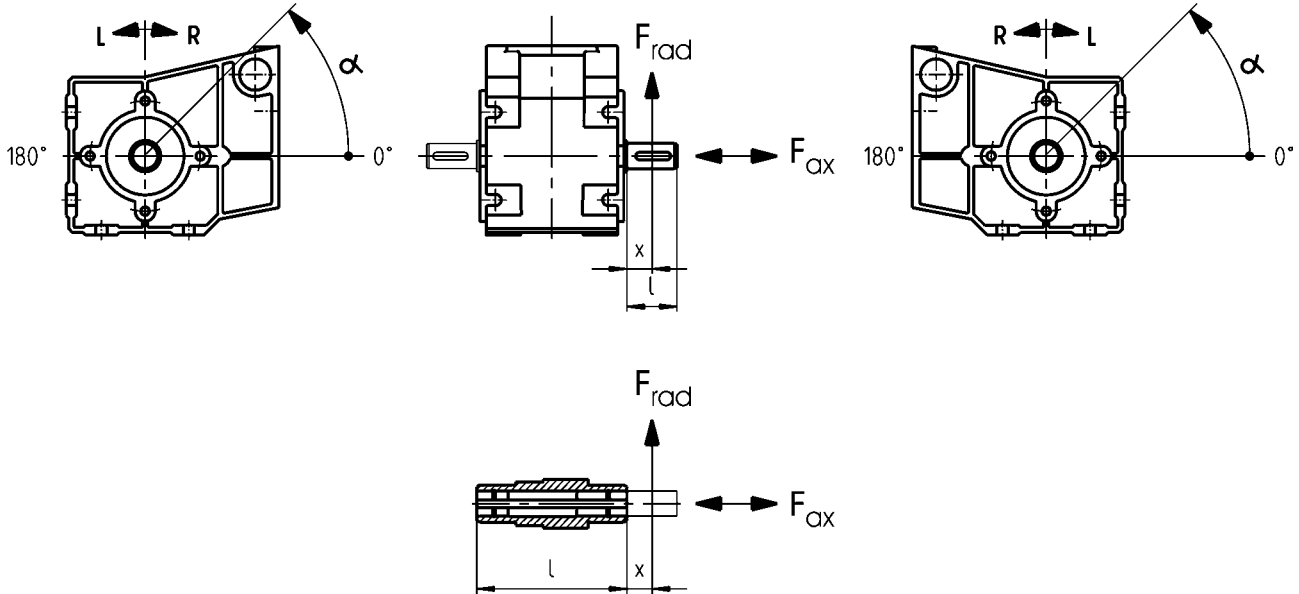
### Permissible radial force

$$F_{rad,per} = \min(f_w \times f_\alpha \times F_{rad,max}; f_w \times F_{rad,max} \text{ at } n_2 \leq 16 \text{ r/min})$$

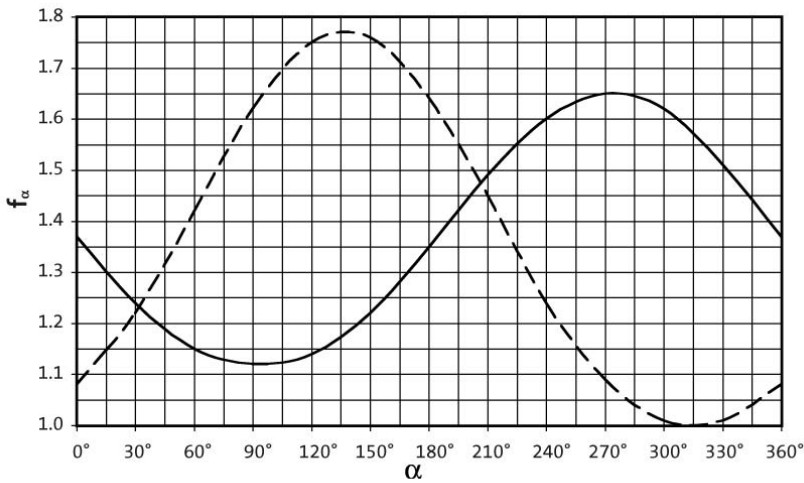
### Permissible axial force

$$F_{ax,per} = F_{ax,max} \text{ if } F_{rad} = 0$$

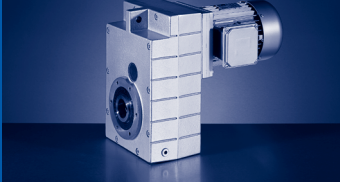
If  $F_{rad}$  and  $F_{ax} \neq 0$ ; please contact Lenze.



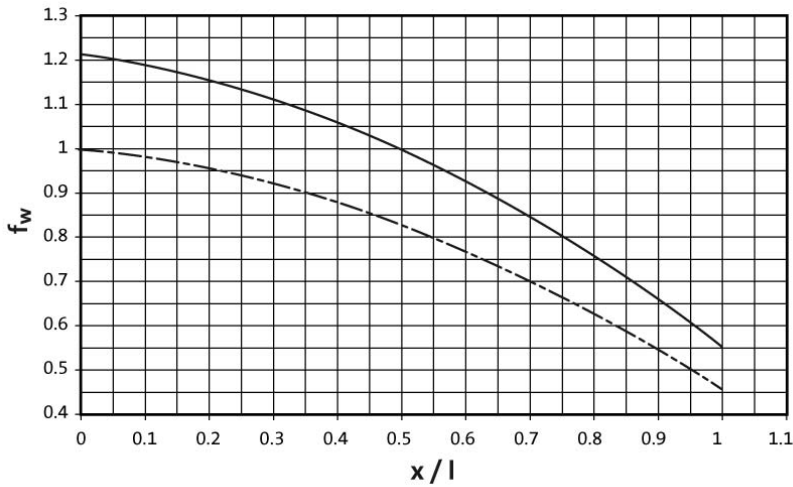
## Effective direction factor $f_\alpha$ at output shaft



— Direction of rotation L  
- - - Direction of rotation R



**Additional load factor  $f_w$  at output shaft**



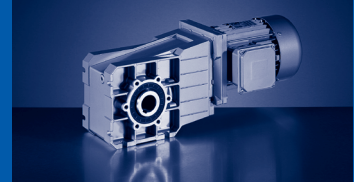
—— Solid shaft (V□□)

- - - Hollow shaft (H□□)

GKR□□-2□ H□□

| Size                                   | $n_2$ [r/min] |               |               |               |               |               |               |               |               |               |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Gearbox                                | 1000          | 630           | 400           | 250           | 160           | 100           | 63            | 40            | 25            | ≤16           |
| <b>Max. radial force, Hollow shaft</b> |               |               |               |               |               |               |               |               |               |               |
|  | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ |
|  | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           |
| <b>GKR03</b>                           | 900           | 1200          | 2200          | 2500          | 2800          | 3000          | 3000          | 3000          | 3000          | 3000          |
| <b>GKR04</b>                           | 1000          | 2200          | 2550          | 3000          | 3300          | 3600          | 3600          | 3600          | 3600          | 3600          |
| <b>GKR05</b>                           | 1500          | 2250          | 3800          | 4500          | 5100          | 6200          | 7400          | 7800          | 7800          | 7800          |
| <b>GKR06</b>                           | 3000          | 3800          | 5000          | 5200          | 5500          | 7000          | 9000          | 10000         | 10000         | 10000         |
| <b>Max. axial force, Hollow shaft</b>  |               |               |               |               |               |               |               |               |               |               |
|  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  |
|  | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           |
| <b>GKR03</b>                           | 600           | 800           | 1000          | 1100          | 1250          | 1400          | 1400          | 1400          | 1400          | 1400          |
| <b>GKR04</b>                           | 700           | 1000          | 1275          | 1500          | 1650          | 1800          | 1800          | 1800          | 1800          | 1800          |
| <b>GKR05</b>                           | 1100          | 1500          | 1900          | 2200          | 2500          | 3100          | 3700          | 3900          | 3900          | 3900          |
| <b>GKR06</b>                           | 1500          | 2000          | 2500          | 2600          | 2750          | 3500          | 4500          | 5000          | 5000          | 5000          |

- ▶ Application of force  $F_{rad}$ : at hollow shaft end face ( $x = 0$ )
- ▶  $F_{ax,max}$  only valid with  $F_{rad} = 0$
- ▶ Neither radial nor axial forces are permissible for the hollow shaft with shrink disc (S□□).



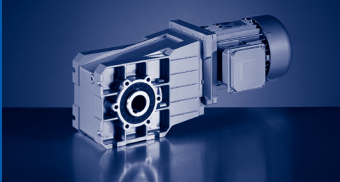
GKR□□-2□ V□R

| Size   | $n_2$ [r/min] |               |               |               |               |               |               |               |               |               |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Gearbox  | 1000          | 630           | 400           | 250           | 160           | 100           | 63            | 40            | 25            | ≤16           |
| <b>Max. radial force, Solid shaft without flange</b> |               |               |               |               |               |               |               |               |               |               |
|  | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ |
|  | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           |
| GKR03  | 900           | 1200          | 1800          | 2100          | 2400          | 2800          | 3000          | 3000          | 3000          | 3000          |
| GKR04  | 1000          | 1800          | 2100          | 2500          | 2700          | 3000          | 3000          | 3000          | 3000          | 3000          |
| GKR05  | 1500          | 2350          | 3000          | 3600          | 4500          | 5000          | 6000          | 6500          | 6500          | 6500          |
| GKR06  | 2000          | 2800          | 4000          | 4200          | 4500          | 5600          | 7300          | 8600          | 9000          | 9000          |
| <b>Max. axial force, Solid shaft without flange</b>  |               |               |               |               |               |               |               |               |               |               |
|  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  |
|  | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           |
| GKR03  | 600           | 800           | 1000          | 1100          | 1250          | 1400          | 1400          | 1400          | 1400          | 1400          |
| GKR04  | 700           | 1000          | 1275          | 1500          | 1650          | 1800          | 1800          | 1800          | 1800          | 1800          |
| GKR05  | 1100          | 1520          | 1900          | 2200          | 2500          | 3100          | 3700          | 3900          | 3900          | 3900          |
| GKR06  | 1500          | 2000          | 2500          | 2600          | 2750          | 3500          | 4500          | 5000          | 5000          | 5000          |

GKR□□-2□ V□K

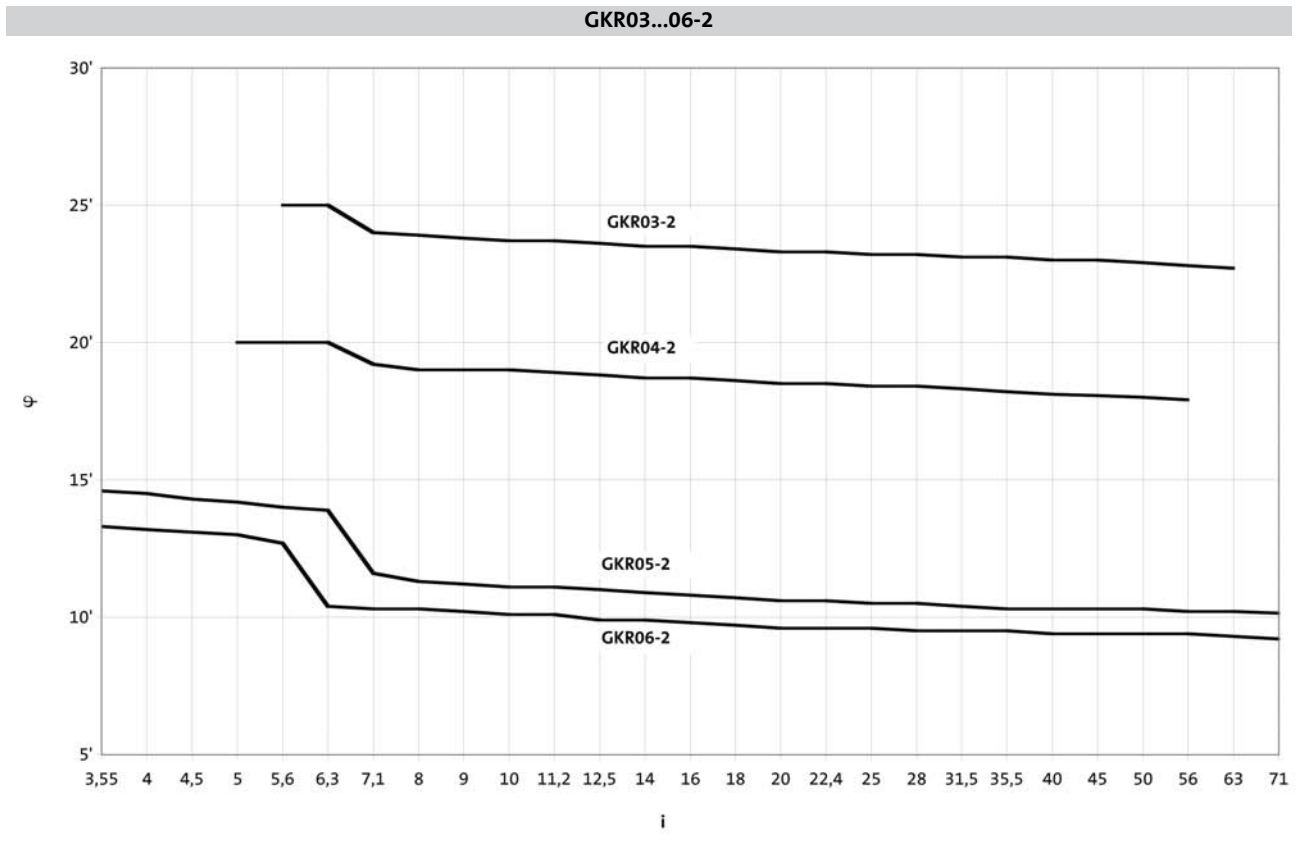
| Size  | $n_2$ [r/min] |               |               |               |               |               |               |               |               |               |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Gearbox   | 1000          | 630           | 400           | 250           | 160           | 100           | 63            | 40            | 25            | ≤16           |
| <b>Max. radial force, Solid shaft with flange</b> |               |               |               |               |               |               |               |               |               |               |
|   | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ |
|   | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           |
| GKR03   | 900           | 1200          | 1800          | 2100          | 2400          | 2800          | 3000          | 3000          | 3000          | 3000          |
| GKR04   | 1000          | 1800          | 2100          | 2500          | 2700          | 3000          | 3000          | 3000          | 3000          | 3000          |
| GKR05   | 2400          | 3600          | 5200          | 6000          | 6500          | 6500          | 6500          | 6500          | 6500          | 6500          |
| GKR06   | 3000          | 4000          | 5500          | 6200          | 7000          | 9000          | 9000          | 9000          | 9000          | 9000          |
| <b>Max. axial force, Solid shaft with flange</b>  |               |               |               |               |               |               |               |               |               |               |
|   | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  |
|   | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           |
| GKR03   | 600           | 800           | 1000          | 1100          | 1250          | 1400          | 1400          | 1400          | 1400          | 1400          |
| GKR04   | 700           | 1000          | 1275          | 1500          | 1650          | 1800          | 1800          | 1800          | 1800          | 1800          |
| GKR05   | 1100          | 1500          | 1900          | 2200          | 2500          | 3100          | 3700          | 3900          | 3900          | 3900          |
| GKR06   | 1500          | 2000          | 2500          | 2600          | 2750          | 3500          | 4500          | 5000          | 5000          | 5000          |

- ▶ Application of force  $F_{rad}$ : centre of shaft journal ( $x = l/2$ )
- ▶  $F_{ax,max}$  only valid with  $F_{rad} = 0$

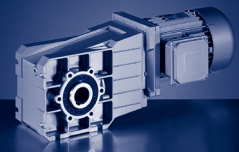


## Output backlash in angular minutes

- ▶ Backlash  $\varphi$  depending on ratio  $i$



5



GKR□□-2

► Moment of inertia (J) depending on ratio i

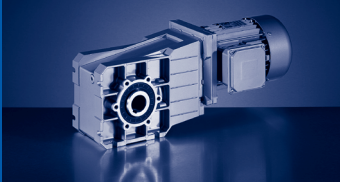
| Gearbox |   |                      | GKR03 |
|---------|---|----------------------|-------|
| 5.411   | J | [kgcm <sup>2</sup> ] | 0.307 |
| 6.222   | J | [kgcm <sup>2</sup> ] | 0.276 |
| 7.111   | J | [kgcm <sup>2</sup> ] | 0.196 |
| 8.178   | J | [kgcm <sup>2</sup> ] | 0.178 |
| 9.101   | J | [kgcm <sup>2</sup> ] | 0.134 |
| 10.466  | J | [kgcm <sup>2</sup> ] | 0.123 |
| 11.640  | J | [kgcm <sup>2</sup> ] | 0.086 |
| 13.386  | J | [kgcm <sup>2</sup> ] | 0.079 |
| 15.111  | J | [kgcm <sup>2</sup> ] | 0.059 |
| 17.378  | J | [kgcm <sup>2</sup> ] | 0.055 |
| 19.365  | J | [kgcm <sup>2</sup> ] | 0.038 |
| 22.270  | J | [kgcm <sup>2</sup> ] | 0.054 |
| 25.051  | J | [kgcm <sup>2</sup> ] | 0.025 |
| 28.808  | J | [kgcm <sup>2</sup> ] | 0.023 |
| 32.593  | J | [kgcm <sup>2</sup> ] | 0.016 |
| 37.481  | J | [kgcm <sup>2</sup> ] | 0.015 |
| 42.222  | J | [kgcm <sup>2</sup> ] | 0.010 |
| 48.556  | J | [kgcm <sup>2</sup> ] | 0.009 |
| 53.889  | J | [kgcm <sup>2</sup> ] | 0.006 |
| 61.972  | J | [kgcm <sup>2</sup> ] | 0.006 |

| Gearbox |   |                      | GKR04 |
|---------|---|----------------------|-------|
| 5.185   | J | [kgcm <sup>2</sup> ] | 0.813 |
| 5.963   | J | [kgcm <sup>2</sup> ] | 0.723 |
| 7.111   | J | [kgcm <sup>2</sup> ] | 0.446 |
| 8.178   | J | [kgcm <sup>2</sup> ] | 0.410 |
| 9.101   | J | [kgcm <sup>2</sup> ] | 3.270 |
| 10.466  | J | [kgcm <sup>2</sup> ] | 0.300 |
| 11.449  | J | [kgcm <sup>2</sup> ] | 0.260 |
| 12.698  | J | [kgcm <sup>2</sup> ] | 1.990 |
| 14.603  | J | [kgcm <sup>2</sup> ] | 0.181 |
| 15.556  | J | [kgcm <sup>2</sup> ] | 1.470 |
| 17.889  | J | [kgcm <sup>2</sup> ] | 0.135 |
| 19.556  | J | [kgcm <sup>2</sup> ] | 0.096 |
| 22.489  | J | [kgcm <sup>2</sup> ] | 0.090 |
| 25.185  | J | [kgcm <sup>2</sup> ] | 0.065 |
| 28.963  | J | [kgcm <sup>2</sup> ] | 0.060 |
| 31.919  | J | [kgcm <sup>2</sup> ] | 0.042 |
| 36.707  | J | [kgcm <sup>2</sup> ] | 0.040 |
| 40.000  | J | [kgcm <sup>2</sup> ] | 0.029 |
| 46.000  | J | [kgcm <sup>2</sup> ] | 0.027 |
| 52.698  | J | [kgcm <sup>2</sup> ] | 0.017 |
| 60.603  | J | [kgcm <sup>2</sup> ] | 0.017 |

| Gearbox |   |                      | GKR05 |
|---------|---|----------------------|-------|
| 3.565   | J | [kgcm <sup>2</sup> ] | 4.950 |
| 4.889   | J | [kgcm <sup>2</sup> ] | 2.793 |
| 6.257   | J | [kgcm <sup>2</sup> ] | 1.791 |
| 6.883   | J | [kgcm <sup>2</sup> ] | 2.572 |
| 7.817   | J | [kgcm <sup>2</sup> ] | 2.316 |
| 9.440   | J | [kgcm <sup>2</sup> ] | 1.531 |
| 10.720  | J | [kgcm <sup>2</sup> ] | 1.396 |
| 12.081  | J | [kgcm <sup>2</sup> ] | 1.021 |
| 13.216  | J | [kgcm <sup>2</sup> ] | 0.874 |
| 13.719  | J | [kgcm <sup>2</sup> ] | 0.938 |
| 15.008  | J | [kgcm <sup>2</sup> ] | 0.805 |
| 16.857  | J | [kgcm <sup>2</sup> ] | 0.597 |
| 19.143  | J | [kgcm <sup>2</sup> ] | 0.554 |
| 20.650  | J | [kgcm <sup>2</sup> ] | 0.439 |
| 23.450  | J | [kgcm <sup>2</sup> ] | 0.411 |
| 26.878  | J | [kgcm <sup>2</sup> ] | 0.270 |
| 30.522  | J | [kgcm <sup>2</sup> ] | 0.253 |
| 33.433  | J | [kgcm <sup>2</sup> ] | 0.191 |
| 37.967  | J | [kgcm <sup>2</sup> ] | 0.180 |
| 43.267  | J | [kgcm <sup>2</sup> ] | 0.118 |
| 49.133  | J | [kgcm <sup>2</sup> ] | 0.112 |
| 52.510  | J | [kgcm <sup>2</sup> ] | 0.085 |
| 59.630  | J | [kgcm <sup>2</sup> ] | 0.081 |
| 67.113  | J | [kgcm <sup>2</sup> ] | 0.054 |
| 76.213  | J | [kgcm <sup>2</sup> ] | 0.051 |

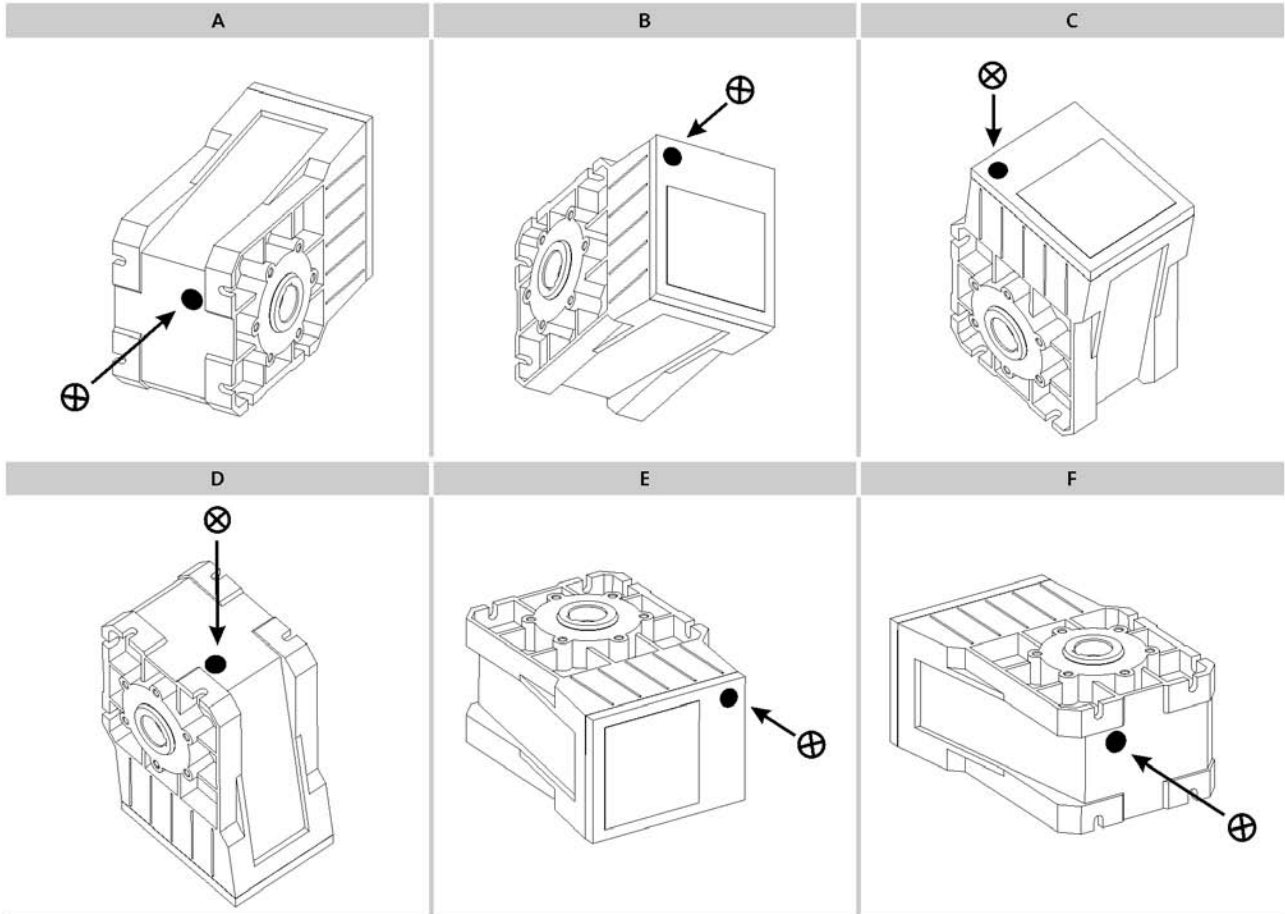
| Gearbox |   |                      | GKR06 |
|---------|---|----------------------|-------|
| 3.431   | J | [kgcm <sup>2</sup> ] | 9.576 |
| 4.706   | J | [kgcm <sup>2</sup> ] | 5.607 |
| 6.022   | J | [kgcm <sup>2</sup> ] | 3.658 |
| 6.481   | J | [kgcm <sup>2</sup> ] | 5.112 |
| 7.146   | J | [kgcm <sup>2</sup> ] | 4.539 |
| 8.889   | J | [kgcm <sup>2</sup> ] | 3.233 |
| 9.800   | J | [kgcm <sup>2</sup> ] | 2.929 |
| 11.376  | J | [kgcm <sup>2</sup> ] | 2.209 |
| 12.444  | J | [kgcm <sup>2</sup> ] | 1.890 |
| 13.720  | J | [kgcm <sup>2</sup> ] | 1.734 |
| 15.873  | J | [kgcm <sup>2</sup> ] | 1.321 |
| 17.500  | J | [kgcm <sup>2</sup> ] | 1.225 |
| 19.444  | J | [kgcm <sup>2</sup> ] | 0.991 |
| 21.438  | J | [kgcm <sup>2</sup> ] | 0.928 |
| 25.309  | J | [kgcm <sup>2</sup> ] | 0.632 |
| 27.903  | J | [kgcm <sup>2</sup> ] | 0.594 |
| 31.481  | J | [kgcm <sup>2</sup> ] | 0.457 |
| 34.708  | J | [kgcm <sup>2</sup> ] | 0.432 |
| 40.741  | J | [kgcm <sup>2</sup> ] | 0.284 |
| 44.917  | J | [kgcm <sup>2</sup> ] | 0.270 |
| 49.444  | J | [kgcm <sup>2</sup> ] | 0.207 |
| 54.513  | J | [kgcm <sup>2</sup> ] | 0.197 |
| 62.500  | J | [kgcm <sup>2</sup> ] | 0.134 |
| 68.906  | J | [kgcm <sup>2</sup> ] | 0.127 |

- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.



### Ventilation position

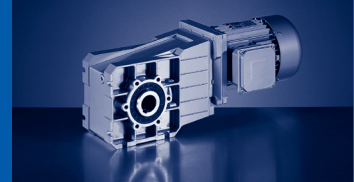
GKR06



⊗ Ventilation

5





### GKR□□-2M HAR / HBR

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 |
|-------|---|------|------------------|------------------|--------|
| GKR03 | m | [kg] | 7                |                  |        |
| GKR04 | m | [kg] | 9                | 11               | 16     |
| GKR05 | m | [kg] | 14               | 16               | 21     |
| GKR06 | m | [kg] | 22               | 24               | 29     |

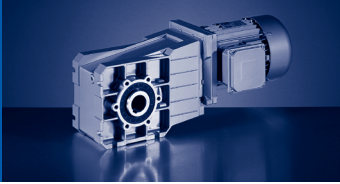
|       |   |      | 080C42 | 090C32 | 100C12<br>100C32 | 112C22 |
|-------|---|------|--------|--------|------------------|--------|
| GKR05 | m | [kg] | 21     | 28     | 37               |        |
| GKR06 | m | [kg] | 29     | 37     | 45               | 58     |

### GKR□□-2M HAK

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 |
|-------|---|------|------------------|------------------|--------|
| GKR03 | m | [kg] | 7                |                  |        |
| GKR04 | m | [kg] | 10               | 12               | 17     |
| GKR05 | m | [kg] | 15               | 17               | 22     |
| GKR06 | m | [kg] | 23               | 25               | 30     |

|       |   |      | 080C42 | 090C32 | 100C12<br>100C32 | 112C22 |
|-------|---|------|--------|--------|------------------|--------|
| GKR05 | m | [kg] | 22     | 29     | 38               |        |
| GKR06 | m | [kg] | 30     | 38     | 46               | 59     |

- Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



# GKR

GKR [kg] -MF□MA

## GKR□□-2M VAR / VBR

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 |
|-------|--------|------------------|------------------|--------|
| GKR03 | m [kg] | 7                |                  |        |
| GKR04 | m [kg] | 10               | 12               | 17     |
| GKR05 | m [kg] | 15               | 17               | 22     |
| GKR06 | m [kg] | 24               | 26               | 30     |

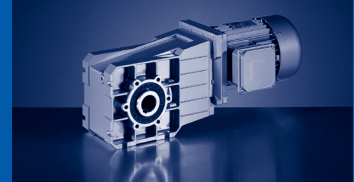
|       |        | 080C42 | 090C32 | 100C12<br>100C32 | 112C22 |
|-------|--------|--------|--------|------------------|--------|
| GKR05 | m [kg] | 22     | 29     | 38               |        |
| GKR06 | m [kg] | 30     | 39     | 47               | 60     |

## GKR□□-2M VAK

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 |
|-------|--------|------------------|------------------|--------|
| GKR03 | m [kg] | 8                |                  |        |
| GKR04 | m [kg] | 10               | 12               | 17     |
| GKR05 | m [kg] | 16               | 18               | 23     |
| GKR06 | m [kg] | 25               | 27               | 31     |

|       |        | 080C42 | 090C32 | 100C12<br>100C32 | 112C22 |
|-------|--------|--------|--------|------------------|--------|
| GKR05 | m [kg] | 23     | 30     | 39               |        |
| GKR06 | m [kg] | 31     | 40     | 48               | 61     |

- Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



### GKR□□-2M SAR / SBR

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 |
|-------|---|------|------------------|------------------|--------|
| GKR03 | m | [kg] | 7                |                  |        |
| GKR04 | m | [kg] | 10               | 12               | 17     |
| GKR05 | m | [kg] | 14               | 17               | 21     |
| GKR06 | m | [kg] | 23               | 25               | 30     |

|       |   |      | 080C42 | 090C32 | 100C12<br>100C32 | 112C22 |
|-------|---|------|--------|--------|------------------|--------|
| GKR05 | m | [kg] | 21     | 29     | 38               |        |
| GKR06 | m | [kg] | 30     | 38     | 46               | 59     |

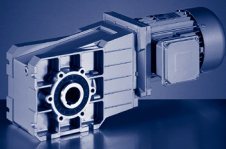
### GKR□□-2M SAK

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 |
|-------|---|------|------------------|------------------|--------|
| GKR03 | m | [kg] | 8                |                  |        |
| GKR04 | m | [kg] | 10               | 12               | 17     |
| GKR05 | m | [kg] | 15               | 18               | 22     |
| GKR06 | m | [kg] | 24               | 26               | 31     |

|       |   |      | 080C42 | 090C32 | 100C12<br>100C32 | 112C22 |
|-------|---|------|--------|--------|------------------|--------|
| GKR05 | m | [kg] | 22     | 30     | 39               |        |
| GKR06 | m | [kg] | 31     | 39     | 47               | 60     |

- Weights with oil filling for mounting position A; all values are approximate.  
The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).

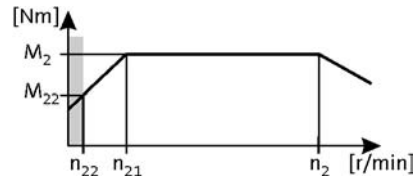


**GKR**  
GKR [Nm] - MF□MA

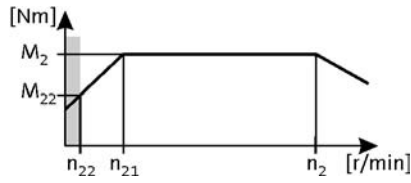
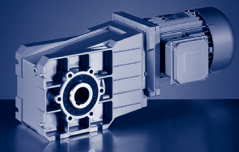
120 Hz:  $P_N = 0.55 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.3 \dots 3440 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 16       | 66       | - | 378     | 10.0     | 13    | 2.6 | 9.101  | GKR03-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 16       | 66       | - | 378     | 10.0     | 13    | 4.5 | 9.101  | GKR04-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 14       | 57       | - | 329     | 12       | 15    | 2.2 | 10.466 | GKR03-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 14       | 57       | - | 329     | 12       | 15    | 4.4 | 10.466 | GKR04-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 13       | 52       | - | 301     | 13       | 17    | 4.1 | 11.449 | GKR04-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 12       | 52       | - | 296     | 13       | 17    | 2.0 | 11.640 | GKR03-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 11       | 47       | - | 271     | 14       | 18    | 3.7 | 12.698 | GKR04-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 11       | 45       | - | 260     | 15       | 19    | 3.9 | 13.216 | GKR05-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 11       | 45       | - | 257     | 15       | 19    | 1.8 | 13.386 | GKR03-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 9.8      | 41       | - | 236     | 16       | 21    | 3.2 | 14.603 | GKR04-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 9.6      | 40       | - | 229     | 17       | 22    | 3.9 | 15.008 | GKR05-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 9.5      | 40       | - | 228     | 17       | 22    | 1.6 | 15.111 | GKR03-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 9.2      | 39       | - | 221     | 17       | 23    | 3.0 | 15.556 | GKR04-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 8.3      | 35       | - | 198     | 19       | 25    | 1.4 | 17.378 | GKR03-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 8.0      | 34       | - | 192     | 20       | 26    | 2.6 | 17.889 | GKR04-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 7.4      | 31       | - | 178     | 21       | 28    | 1.2 | 19.365 | GKR03-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 7.3      | 31       | - | 176     | 22       | 28    | 2.4 | 19.556 | GKR04-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 6.4      | 27       | - | 155     | 24       | 32    | 1.1 | 22.270 | GKR03-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 6.4      | 27       | - | 153     | 25       | 33    | 2.1 | 22.489 | GKR04-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 5.7      | 24       | - | 137     | 28       | 36    | 1.1 | 25.051 | GKR03-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 5.7      | 24       | - | 137     | 28       | 37    | 2.1 | 25.185 | GKR04-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 5.0      | 21       | - | 119     | 32       | 42    | 0.9 | 28.808 | GKR03-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 5.0      | 21       | - | 119     | 32       | 42    | 1.8 | 28.963 | GKR04-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 4.7      | 20       | - | 113     | 34       | 44    | 4.2 | 30.522 | GKR05-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 4.5      | 19       | - | 108     | 35       | 46    | 1.7 | 31.919 | GKR04-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 3.9      | 16       | - | 94      | 40       | 53    | 1.5 | 36.707 | GKR04-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 3.6      | 15       | - | 86      | 44       | 58    | 1.2 | 40.000 | GKR04-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 3.1      | 13       | - | 75      | 51       | 67    | 1.3 | 46.000 | GKR04-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 2.9      | 12       | - | 70      | 54       | 71    | 3.2 | 49.133 | GKR05-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 2.7      | 11       | - | 66      | 58       | 76    | 3.0 | 52.510 | GKR05-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 2.6      | 11       | - | 63      | 60       | 79    | 3.5 | 54.513 | GKR06-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 2.4      | 10       | - | 58      | 66       | 87    | 2.7 | 59.630 | GKR05-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 2.3      | 9.6      | - | 55      | 69       | 91    | 2.8 | 62.500 | GKR06-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 2.1      | 8.9      | - | 51      | 74       | 97    | 1.5 | 67.113 | GKR05-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 2.1      | 8.7      | - | 50      | 76       | 100   | 2.8 | 68.906 | GKR06-2M□□□063C32 | E84AV□□□5514□□□ | 230 |
| 1.9      | 7.9      | - | 45      | 84       | 111   | 1.5 | 76.213 | GKR05-2M□□□063C32 | E84AV□□□5514□□□ | 230 |

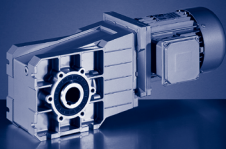


120 Hz:  $P_N = 0.75 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 141.7 \dots 3400 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | $c$ | $i$    |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|--------|-------------------|-----------------|-----|
| 16                  | 66                  | - | 374              | 14               | 18            | 1.9 | 9.101  | GKR03-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 16                  | 66                  | - | 374              | 14               | 18            | 3.3 | 9.101  | GKR04-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 14                  | 57                  | - | 325              | 16               | 21            | 1.6 | 10.466 | GKR03-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 14                  | 57                  | - | 325              | 16               | 21            | 3.2 | 10.466 | GKR04-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 12                  | 52                  | - | 297              | 17               | 23            | 3.0 | 11.449 | GKR04-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 12                  | 52                  | - | 292              | 17               | 23            | 1.5 | 11.640 | GKR03-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 11                  | 47                  | - | 268              | 19               | 25            | 2.7 | 12.698 | GKR04-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 11                  | 45                  | - | 257              | 20               | 26            | 2.9 | 13.216 | GKR05-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 11                  | 45                  | - | 254              | 20               | 27            | 1.3 | 13.386 | GKR03-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 9.7                 | 41                  | - | 233              | 22               | 29            | 2.3 | 14.603 | GKR04-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 9.4                 | 40                  | - | 227              | 23               | 30            | 2.9 | 15.008 | GKR05-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 9.4                 | 40                  | - | 225              | 23               | 30            | 1.1 | 15.111 | GKR03-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 9.1                 | 39                  | - | 219              | 23               | 31            | 2.2 | 15.556 | GKR04-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 8.2                 | 35                  | - | 196              | 26               | 35            | 1.0 | 17.378 | GKR03-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 7.9                 | 34                  | - | 190              | 27               | 36            | 1.9 | 17.889 | GKR04-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 7.2                 | 31                  | - | 174              | 29               | 39            | 1.8 | 19.556 | GKR04-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 6.3                 | 27                  | - | 151              | 34               | 45            | 1.5 | 22.489 | GKR04-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 5.6                 | 24                  | - | 135              | 38               | 50            | 1.5 | 25.185 | GKR04-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 5.3                 | 22                  | - | 127              | 40               | 54            | 3.1 | 26.878 | GKR05-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 4.9                 | 21                  | - | 117              | 43               | 58            | 1.3 | 28.963 | GKR04-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 4.6                 | 20                  | - | 111              | 46               | 61            | 3.1 | 30.522 | GKR05-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 4.4                 | 19                  | - | 107              | 48               | 64            | 1.2 | 31.919 | GKR04-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 4.2                 | 18                  | - | 102              | 50               | 67            | 2.6 | 33.433 | GKR05-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 3.9                 | 16                  | - | 93               | 55               | 74            | 1.1 | 36.707 | GKR04-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 3.7                 | 16                  | - | 90               | 57               | 76            | 2.6 | 37.967 | GKR05-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 3.5                 | 15                  | - | 84               | 61               | 82            | 2.9 | 40.741 | GKR06-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 3.3                 | 14                  | - | 79               | 65               | 87            | 2.6 | 43.267 | GKR05-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 3.2                 | 13                  | - | 76               | 67               | 90            | 2.9 | 44.917 | GKR06-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 3.1                 | 13                  | - | 74               | 69               | 92            | 0.9 | 46.000 | GKR04-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 2.9                 | 12                  | - | 69               | 74               | 98            | 2.3 | 49.133 | GKR05-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 2.9                 | 12                  | - | 69               | 74               | 99            | 2.5 | 49.444 | GKR06-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 2.7                 | 11                  | - | 65               | 79               | 105           | 2.2 | 52.510 | GKR05-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 2.6                 | 11                  | - | 62               | 82               | 109           | 2.5 | 54.513 | GKR06-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 2.4                 | 10                  | - | 57               | 89               | 119           | 1.9 | 59.630 | GKR05-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 2.3                 | 9.6                 | - | 54               | 94               | 125           | 2.0 | 62.500 | GKR06-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 2.1                 | 8.9                 | - | 51               | 101              | 134           | 1.1 | 67.113 | GKR05-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 2.1                 | 8.7                 | - | 49               | 103              | 138           | 2.0 | 68.906 | GKR06-2M□□□063C42 | E84AV□□□7514□□□ | 230 |
| 1.9                 | 7.9                 | - | 45               | 114              | 153           | 1.1 | 76.213 | GKR05-2M□□□063C42 | E84AV□□□7514□□□ | 230 |



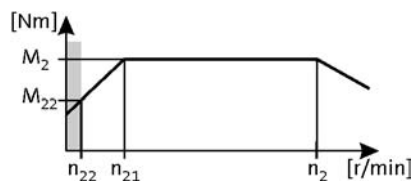
# GKR

GKR [Nm] - MF□MA

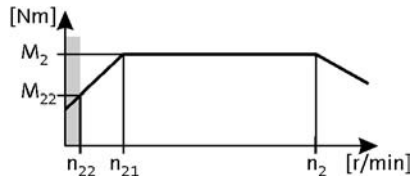
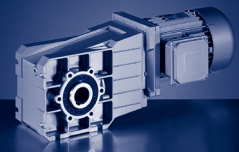
120 Hz:  $P_N = 1.10 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.4 \dots 3490 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 23       | 96       | - | 558     | 14       | 18    | 4.2 | 6.257  | GKR05-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 16       | 66       | - | 384     | 20       | 26    | 2.4 | 9.101  | GKR04-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 14       | 57       | - | 334     | 23       | 30    | 2.2 | 10.466 | GKR04-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 13       | 52       | - | 305     | 25       | 33    | 2.1 | 11.449 | GKR04-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 12       | 47       | - | 275     | 28       | 36    | 1.9 | 12.698 | GKR04-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 11       | 45       | - | 264     | 29       | 38    | 4.2 | 13.216 | GKR05-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 10       | 41       | - | 239     | 32       | 42    | 1.6 | 14.603 | GKR04-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 9.7      | 40       | - | 233     | 33       | 43    | 3.9 | 15.008 | GKR05-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 9.4      | 39       | - | 224     | 34       | 45    | 1.5 | 15.556 | GKR04-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 8.1      | 34       | - | 195     | 39       | 51    | 1.3 | 17.889 | GKR04-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 7.4      | 31       | - | 179     | 43       | 56    | 1.2 | 19.556 | GKR04-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 7.0      | 29       | - | 169     | 45       | 59    | 3.1 | 20.650 | GKR05-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 6.5      | 27       | - | 155     | 49       | 64    | 1.1 | 22.489 | GKR04-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 6.2      | 26       | - | 149     | 52       | 67    | 2.7 | 23.450 | GKR05-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 5.8      | 24       | - | 139     | 55       | 72    | 1.1 | 25.185 | GKR04-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 5.4      | 22       | - | 130     | 59       | 77    | 2.7 | 26.878 | GKR05-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 5.0      | 21       | - | 121     | 64       | 83    | 0.9 | 28.963 | GKR04-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 4.8      | 20       | - | 114     | 67       | 87    | 2.4 | 30.522 | GKR05-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 4.6      | 19       | - | 111     | 69       | 90    | 3.4 | 31.481 | GKR06-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 4.4      | 18       | - | 104     | 73       | 96    | 2.2 | 33.433 | GKR05-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 3.8      | 16       | - | 92      | 83       | 109   | 1.9 | 37.967 | GKR05-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 3.4      | 14       | - | 81      | 95       | 124   | 1.8 | 43.267 | GKR05-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 3.0      | 12       | - | 71      | 108      | 141   | 1.6 | 49.133 | GKR05-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 2.9      | 12       | - | 71      | 109      | 141   | 2.8 | 49.444 | GKR06-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 2.8      | 11       | - | 67      | 115      | 150   | 1.5 | 52.510 | GKR05-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 2.7      | 11       | - | 64      | 120      | 156   | 2.7 | 54.513 | GKR06-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 2.4      | 10       | - | 59      | 131      | 171   | 1.3 | 59.630 | GKR05-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 2.3      | 9.6      | - | 56      | 137      | 179   | 1.6 | 62.500 | GKR06-2M□□□071C32 | E84AV□□□1124□□□ | 230 |
| 2.1      | 8.7      | - | 51      | 151      | 197   | 1.6 | 68.906 | GKR06-2M□□□071C32 | E84AV□□□1124□□□ | 230 |

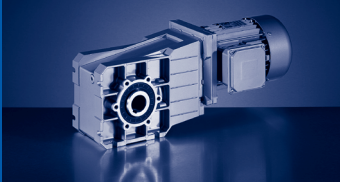


120 Hz:  $P_N = 1.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.8 \dots 3450 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | $c$ | $i$    |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|--------|-------------------|-----------------|-----|
| 23                  | 96                  | - | 551              | 19               | 25            | 3.1 | 6.257  | GKR05-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 16                  | 66                  | - | 379              | 27               | 36            | 1.8 | 9.101  | GKR04-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 14                  | 57                  | - | 330              | 31               | 41            | 1.6 | 10.466 | GKR04-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 13                  | 52                  | - | 301              | 34               | 45            | 1.5 | 11.449 | GKR04-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 12                  | 50                  | - | 286              | 36               | 48            | 3.1 | 12.081 | GKR05-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 11                  | 47                  | - | 272              | 38               | 50            | 1.4 | 12.698 | GKR04-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 11                  | 45                  | - | 261              | 40               | 52            | 3.1 | 13.216 | GKR05-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 11                  | 44                  | - | 252              | 41               | 54            | 3.0 | 13.719 | GKR05-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 9.8                 | 41                  | - | 236              | 44               | 58            | 1.2 | 14.603 | GKR04-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 9.6                 | 40                  | - | 230              | 45               | 59            | 2.9 | 15.008 | GKR05-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 9.2                 | 39                  | - | 222              | 47               | 61            | 1.1 | 15.556 | GKR04-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 9.1                 | 38                  | - | 217              | 48               | 63            | 3.1 | 15.873 | GKR06-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 8.5                 | 36                  | - | 205              | 51               | 67            | 2.7 | 16.857 | GKR05-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 8.2                 | 34                  | - | 197              | 52               | 69            | 3.1 | 17.500 | GKR06-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 8.0                 | 34                  | - | 193              | 54               | 71            | 1.0 | 17.889 | GKR04-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 7.5                 | 31                  | - | 180              | 57               | 76            | 2.4 | 19.143 | GKR05-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 7.0                 | 29                  | - | 167              | 62               | 82            | 2.2 | 20.650 | GKR05-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 6.1                 | 26                  | - | 147              | 70               | 93            | 2.0 | 23.450 | GKR05-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 5.7                 | 24                  | - | 136              | 76               | 100           | 2.9 | 25.309 | GKR06-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 5.4                 | 22                  | - | 128              | 81               | 106           | 1.9 | 26.878 | GKR05-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 5.2                 | 22                  | - | 124              | 84               | 110           | 2.9 | 27.903 | GKR06-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 4.7                 | 20                  | - | 113              | 91               | 120           | 1.7 | 30.522 | GKR05-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 4.6                 | 19                  | - | 110              | 94               | 124           | 2.4 | 31.481 | GKR06-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 4.3                 | 18                  | - | 103              | 100              | 132           | 1.6 | 33.433 | GKR05-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 4.1                 | 17                  | - | 99               | 104              | 137           | 2.4 | 34.708 | GKR06-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 3.8                 | 16                  | - | 91               | 114              | 150           | 1.4 | 37.967 | GKR05-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 3.5                 | 15                  | - | 85               | 122              | 161           | 2.5 | 40.741 | GKR06-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 3.3                 | 14                  | - | 80               | 130              | 171           | 1.3 | 43.267 | GKR05-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 3.2                 | 13                  | - | 77               | 135              | 177           | 2.4 | 44.917 | GKR06-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 2.9                 | 12                  | - | 70               | 147              | 194           | 1.2 | 49.133 | GKR05-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 2.9                 | 12                  | - | 70               | 148              | 195           | 2.0 | 49.444 | GKR06-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 2.7                 | 11                  | - | 66               | 157              | 207           | 1.1 | 52.510 | GKR05-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 2.6                 | 11                  | - | 63               | 163              | 215           | 2.0 | 54.513 | GKR06-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 2.4                 | 10                  | - | 58               | 179              | 235           | 1.0 | 59.630 | GKR05-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 2.3                 | 9.6                 | - | 55               | 187              | 247           | 1.2 | 62.500 | GKR06-2M□□□071C42 | E84AV□□□1524□□□ | 230 |
| 2.1                 | 8.7                 | - | 50               | 206              | 272           | 1.2 | 68.906 | GKR06-2M□□□071C42 | E84AV□□□1524□□□ | 230 |



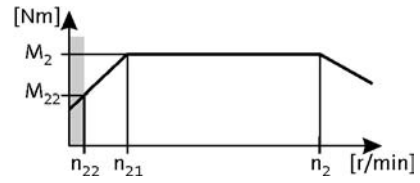
# GKR

GKR [Nm] - MF□MA

120 Hz:  $P_N = 2.20 \text{ kW}$

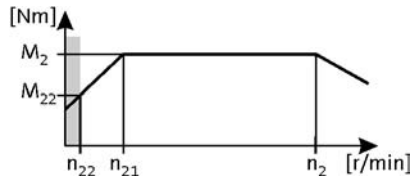
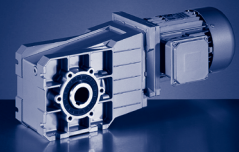
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.8 \dots 3500 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 23       | 96       | - | 559     | 27       | 36    | 3.3 | 6.257  | GKR05-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 16       | 66       | - | 385     | 39       | 52    | 1.2 | 9.101  | GKR04-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 14       | 57       | - | 334     | 45       | 60    | 1.1 | 10.466 | GKR04-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 13       | 52       | - | 306     | 49       | 65    | 1.0 | 11.449 | GKR04-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 12       | 50       | - | 290     | 52       | 69    | 2.3 | 12.081 | GKR05-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 12       | 47       | - | 276     | 54       | 72    | 0.9 | 12.698 | GKR04-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 11       | 45       | - | 265     | 57       | 75    | 2.1 | 13.216 | GKR05-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 11       | 44       | - | 255     | 59       | 78    | 2.1 | 13.719 | GKR05-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 9.7      | 40       | - | 233     | 64       | 86    | 2.0 | 15.008 | GKR05-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 8.7      | 36       | - | 208     | 72       | 96    | 1.9 | 16.857 | GKR05-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 7.6      | 31       | - | 183     | 82       | 109   | 1.7 | 19.143 | GKR05-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 7.5      | 31       | - | 180     | 83       | 111   | 3.1 | 19.444 | GKR06-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 7.1      | 29       | - | 170     | 88       | 118   | 1.5 | 20.650 | GKR05-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 6.8      | 28       | - | 163     | 92       | 122   | 2.8 | 21.438 | GKR06-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 6.2      | 26       | - | 149     | 100      | 134   | 1.4 | 23.450 | GKR05-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 5.8      | 24       | - | 138     | 108      | 144   | 2.7 | 25.309 | GKR06-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 5.4      | 22       | - | 130     | 115      | 153   | 1.3 | 26.878 | GKR05-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 5.2      | 22       | - | 125     | 119      | 159   | 2.4 | 27.903 | GKR06-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 4.8      | 20       | - | 115     | 131      | 174   | 1.2 | 30.522 | GKR05-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 4.6      | 19       | - | 111     | 135      | 180   | 2.1 | 31.481 | GKR06-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 4.4      | 18       | - | 105     | 143      | 191   | 1.1 | 33.433 | GKR05-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 4.2      | 17       | - | 101     | 148      | 198   | 1.9 | 34.708 | GKR06-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 3.8      | 16       | - | 92      | 162      | 217   | 0.9 | 37.967 | GKR05-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 3.6      | 15       | - | 86      | 174      | 232   | 1.8 | 40.741 | GKR06-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 3.3      | 13       | - | 78      | 192      | 256   | 1.7 | 44.917 | GKR06-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 3.0      | 12       | - | 71      | 211      | 282   | 1.5 | 49.444 | GKR06-2M□□□080C32 | E84AV□□□2224□□□ | 230 |
| 2.7      | 11       | - | 64      | 233      | 311   | 1.4 | 54.513 | GKR06-2M□□□080C32 | E84AV□□□2224□□□ | 230 |



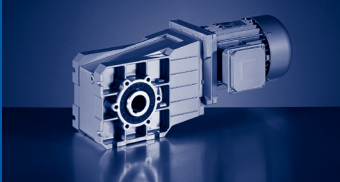


120 Hz:  $P_N = 3.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 24       | 149      | - | 578     | 35       | 47    | 3.1 | 6.022  | GKR06-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 23       | 144      | - | 556     | 37       | 49    | 2.4 | 6.257  | GKR05-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 13       | 79       | - | 306     | 67       | 89    | 3.1 | 11.376 | GKR06-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 12       | 75       | - | 288     | 71       | 95    | 1.7 | 12.081 | GKR05-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 12       | 72       | - | 280     | 73       | 97    | 3.1 | 12.444 | GKR06-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 11       | 68       | - | 263     | 78       | 103   | 1.6 | 13.216 | GKR05-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 11       | 66       | - | 254     | 81       | 107   | 1.5 | 13.719 | GKR05-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 11       | 66       | - | 254     | 81       | 107   | 3.0 | 13.720 | GKR06-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 9.7      | 60       | - | 232     | 88       | 117   | 1.4 | 15.008 | GKR05-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 9.1      | 57       | - | 219     | 93       | 124   | 2.7 | 15.873 | GKR06-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 8.6      | 53       | - | 206     | 99       | 132   | 1.4 | 16.857 | GKR05-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 8.3      | 51       | - | 199     | 103      | 137   | 2.5 | 17.500 | GKR06-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 7.6      | 47       | - | 182     | 112      | 150   | 1.2 | 19.143 | GKR05-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 7.5      | 46       | - | 179     | 114      | 152   | 2.2 | 19.444 | GKR06-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 7.0      | 44       | - | 169     | 121      | 162   | 1.1 | 20.650 | GKR05-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 6.8      | 42       | - | 162     | 126      | 168   | 2.0 | 21.438 | GKR06-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 6.2      | 38       | - | 148     | 138      | 183   | 1.0 | 23.450 | GKR05-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 5.7      | 36       | - | 138     | 149      | 198   | 2.0 | 25.309 | GKR06-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 5.4      | 34       | - | 130     | 158      | 210   | 1.0 | 26.878 | GKR05-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 5.2      | 32       | - | 125     | 164      | 218   | 1.8 | 27.903 | GKR06-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 4.6      | 29       | - | 111     | 185      | 246   | 1.6 | 31.481 | GKR06-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 4.2      | 26       | - | 100     | 204      | 272   | 1.4 | 34.708 | GKR06-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 3.6      | 22       | - | 85      | 239      | 319   | 1.3 | 40.741 | GKR06-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 3.2      | 20       | - | 78      | 264      | 351   | 1.2 | 44.917 | GKR06-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 2.9      | 18       | - | 70      | 290      | 387   | 1.1 | 49.444 | GKR06-2M□□□080C42 | E84AV□□□3024□□S | 230 |
| 2.7      | 17       | - | 64      | 320      | 426   | 1.0 | 54.513 | GKR06-2M□□□080C42 | E84AV□□□3024□□S | 230 |



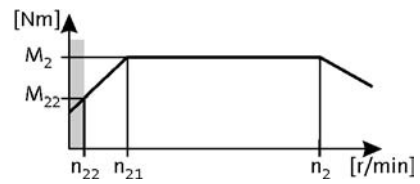
# GKR

GKR [Nm] - MF□MA

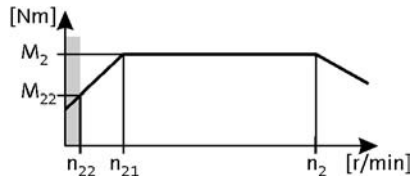
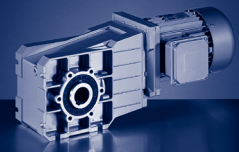
120 Hz:  $P_N = 4.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 24       | 100      | - | 578     | 44       | 63    | 2.9 | 6.022  | GKR06-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 23       | 96       | - | 556     | 46       | 65    | 1.8 | 6.257  | GKR05-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 13       | 53       | - | 306     | 83       | 119   | 2.8 | 11.376 | GKR06-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 12       | 50       | - | 288     | 88       | 126   | 1.2 | 12.081 | GKR05-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 12       | 48       | - | 280     | 91       | 130   | 2.6 | 12.444 | GKR06-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 11       | 45       | - | 263     | 97       | 138   | 1.2 | 13.216 | GKR05-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 11       | 44       | - | 254     | 100      | 143   | 1.1 | 13.719 | GKR05-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 11       | 44       | - | 254     | 100      | 143   | 2.3 | 13.720 | GKR06-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 9.7      | 40       | - | 232     | 110      | 157   | 1.1 | 15.008 | GKR05-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 9.1      | 38       | - | 219     | 116      | 166   | 2.1 | 15.873 | GKR06-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 8.6      | 36       | - | 206     | 123      | 176   | 1.0 | 16.857 | GKR05-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 8.3      | 34       | - | 199     | 128      | 183   | 1.9 | 17.500 | GKR06-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 7.6      | 31       | - | 182     | 140      | 200   | 0.9 | 19.143 | GKR05-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 7.5      | 31       | - | 179     | 142      | 203   | 1.7 | 19.444 | GKR06-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 6.8      | 28       | - | 162     | 157      | 224   | 1.5 | 21.438 | GKR06-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 5.7      | 24       | - | 138     | 185      | 264   | 1.5 | 25.309 | GKR06-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 5.2      | 22       | - | 125     | 204      | 291   | 1.3 | 27.903 | GKR06-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 4.6      | 19       | - | 111     | 230      | 328   | 1.2 | 31.481 | GKR06-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 4.2      | 17       | - | 100     | 253      | 362   | 1.1 | 34.708 | GKR06-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 3.6      | 15       | - | 85      | 297      | 425   | 1.0 | 40.741 | GKR06-2M□□□090C32 | E84AV□□□4024□□□ | 230 |
| 3.2      | 13       | - | 78      | 328      | 468   | 0.9 | 44.917 | GKR06-2M□□□090C32 | E84AV□□□4024□□□ | 230 |

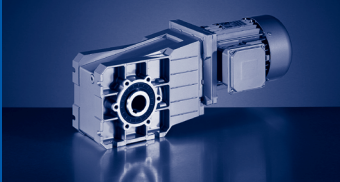


120 Hz:  $P_N = 5.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 146.9 \dots 3525 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | $c$ | $i$    |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|--------|-------------------|-----------------|-----|
| 24                  | 100                 | - | 585              | 60               | 85            | 2.5 | 6.022  | GKR06-2M□□□100C12 | E84AV□□□5524□□□ | 230 |
| 24                  | 96                  | - | 563              | 62               | 89            | 1.3 | 6.257  | GKR05-2M□□□100C12 | E84AV□□□5524□□□ | 230 |
| 13                  | 53                  | - | 310              | 113              | 161           | 2.0 | 11.376 | GKR06-2M□□□100C12 | E84AV□□□5524□□□ | 230 |
| 12                  | 50                  | - | 292              | 120              | 171           | 0.9 | 12.081 | GKR05-2M□□□100C12 | E84AV□□□5524□□□ | 230 |
| 12                  | 48                  | - | 283              | 123              | 176           | 1.9 | 12.444 | GKR06-2M□□□100C12 | E84AV□□□5524□□□ | 230 |
| 11                  | 44                  | - | 257              | 136              | 194           | 1.7 | 13.720 | GKR06-2M□□□100C12 | E84AV□□□5524□□□ | 230 |
| 9.3                 | 38                  | - | 222              | 157              | 225           | 1.5 | 15.873 | GKR06-2M□□□100C12 | E84AV□□□5524□□□ | 230 |
| 8.4                 | 34                  | - | 201              | 173              | 248           | 1.4 | 17.500 | GKR06-2M□□□100C12 | E84AV□□□5524□□□ | 230 |
| 7.6                 | 31                  | - | 181              | 193              | 275           | 1.2 | 19.444 | GKR06-2M□□□100C12 | E84AV□□□5524□□□ | 230 |
| 6.9                 | 28                  | - | 164              | 212              | 304           | 1.1 | 21.438 | GKR06-2M□□□100C12 | E84AV□□□5524□□□ | 230 |
| 5.8                 | 24                  | - | 139              | 251              | 358           | 1.1 | 25.309 | GKR06-2M□□□100C12 | E84AV□□□5524□□□ | 230 |
| 5.3                 | 22                  | - | 126              | 277              | 395           | 1.0 | 27.903 | GKR06-2M□□□100C12 | E84AV□□□5524□□□ | 230 |



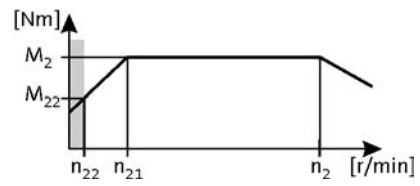
# GKR

GKR [Nm] - MF□MA

120 Hz:  $P_N = 7.50 \text{ kW}$

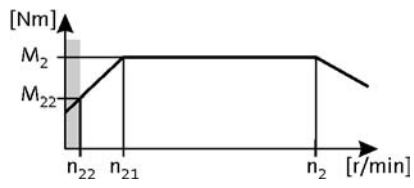
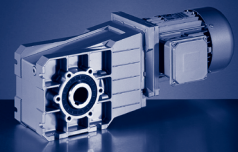
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 146.5 \dots 3515 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  | - | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 24       | 100      | - | 584     | 82       | 117   | 1.8 | 6.022  | GKR06-2M□□□100C32 | E84AV□□□7524□□□ | 230 |
| 23       | 96       | - | 562     | 85       | 121   | 1.0 | 6.257  | GKR05-2M□□□100C32 | E84AV□□□7524□□□ | 230 |
| 13       | 53       | - | 309     | 154      | 220   | 1.5 | 11.376 | GKR06-2M□□□100C32 | E84AV□□□7524□□□ | 230 |
| 12       | 48       | - | 283     | 169      | 241   | 1.4 | 12.444 | GKR06-2M□□□100C32 | E84AV□□□7524□□□ | 230 |
| 11       | 44       | - | 256     | 186      | 266   | 1.2 | 13.720 | GKR06-2M□□□100C32 | E84AV□□□7524□□□ | 230 |
| 9.2      | 38       | - | 221     | 215      | 307   | 1.1 | 15.873 | GKR06-2M□□□100C32 | E84AV□□□7524□□□ | 230 |
| 8.4      | 34       | - | 201     | 237      | 339   | 1.0 | 17.500 | GKR06-2M□□□100C32 | E84AV□□□7524□□□ | 230 |
| 7.5      | 31       | - | 181     | 264      | 376   | 0.9 | 19.444 | GKR06-2M□□□100C32 | E84AV□□□7524□□□ | 230 |



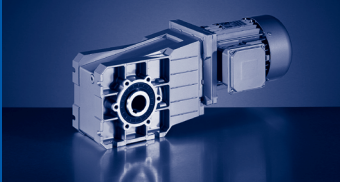


120 Hz:  $P_N = 11.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

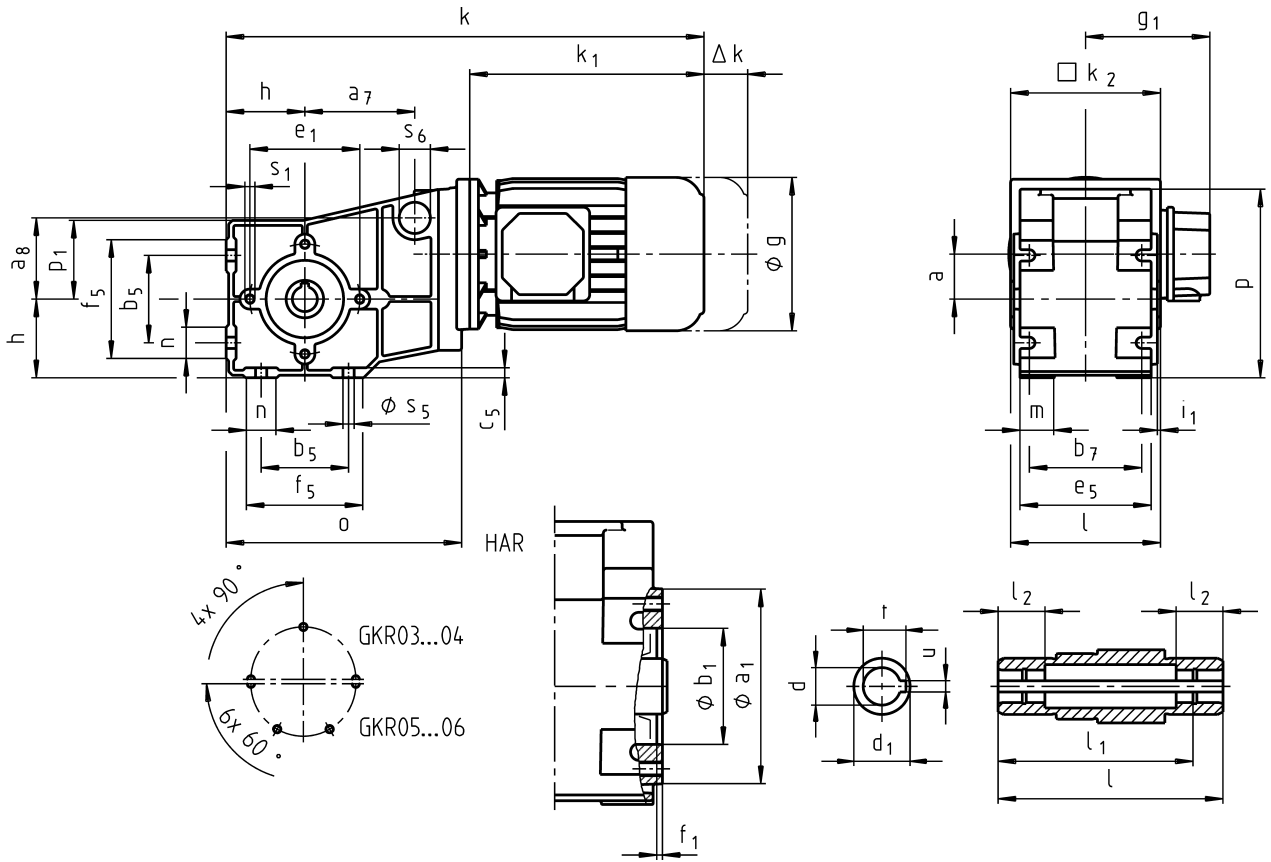
$n_1 = 147.1 \dots 3530 \text{ r/min}$

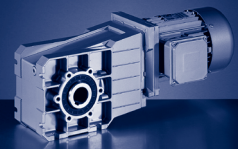
| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 24       | 100      | - | 586     | 109      | 170   | 1.2 | 6.022  | GKR06-2M□□□112C22 | E84AV□□□1134□□□ | 230 |
| 13       | 53       | - | 310     | 206      | 322   | 1.0 | 11.376 | GKR06-2M□□□112C22 | E84AV□□□1134□□□ | 230 |
| 12       | 48       | - | 284     | 225      | 352   | 1.0 | 12.444 | GKR06-2M□□□112C22 | E84AV□□□1134□□□ | 230 |



**GKR**  
GKR [mm] - MF□MA

**GKR□□-2M H□R**





|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 | 090C32 | 100C12<br>100C32 | 112C22 |
|----------------------|---------|------------------|------------------|--------|--------|--------|------------------|--------|
| <b>g</b>             |         | 123              | 139              |        | 156    | 176    | 194              | 218    |
| <b>B1</b>            | MFEMAXX | 100              | 109              |        | 141    | 146    | 157              | 167    |
|                      | MFEMABR | 107              | 118              |        | 132    | 137    | 147              | 158    |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              |        | 224.5  | 274    | 324              | 363    |
| <b>k<sub>2</sub></b> |         | 120              |                  |        | 145    |        | 180              | 222    |
|                      | MFEMABR | 40               | 52               |        | 73     | 68     | 76               | 90     |
| <b>Δ k</b>           | MFEMAXX |                  |                  | 128    |        |        | 109              | 102    |
|                      | MFEMABR | 170              | 165              |        | 183    | 181    | 170              | 183    |
| <b>k</b>             |         |                  |                  |        |        |        |                  |        |
| <b>GKR03</b>         |         | 332              |                  |        |        |        |                  |        |
| <b>GKR04</b>         |         | 383              | 403              | 425    |        |        |                  |        |
| <b>GKR05</b>         |         | 436              | 456              |        | 479    | 538    | 588              |        |
| <b>GKR06</b>         |         | 488              | 508              |        | 530    | 590    | 640              | 685    |

|              | a  | a <sub>7</sub> | a <sub>8</sub> | h   | o     | p <sup>1)</sup> | p <sub>1</sub> | s <sub>6</sub> |
|--------------|----|----------------|----------------|-----|-------|-----------------|----------------|----------------|
| <b>GKR03</b> | 29 | 66             | 39             | 50  | 142   | 117             | 48             | 25             |
| <b>GKR04</b> | 36 | 88             | 65             | 63  | 189   | 151             | 63             | 25             |
| <b>GKR05</b> | 40 |                |                | 80  | 250.5 | 181             | 82             |                |
| <b>GKR06</b> | 51 |                |                | 100 | 307   | 226             | 100            |                |

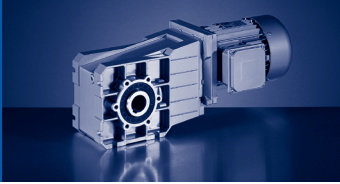
|              | d <sup>2)</sup> | d <sub>1</sub> | l <sup>1)</sup> | l <sub>1</sub> | l <sub>2</sub> | u   | t <sup>3)</sup> | i <sub>1</sub> | a <sub>1</sub> | b <sub>1</sub> | e <sub>1</sub> | f <sub>1</sub> | s <sub>1</sub> |
|--------------|-----------------|----------------|-----------------|----------------|----------------|-----|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | H7              |                |                 |                |                | JS9 | +0,2            |                |                | J7             |                |                |                |
| <b>GKR03</b> | 18              | 30             | 100             | 85             | 22             | 6   | 20.8            | 2.5            | 85             | 55             | 70             | 2.5            | M6x12          |
|              | 20              | 30             | 100             | 85             | 22             | 6   | 22.8            | 2.5            |                |                |                |                |                |
| <b>GKR04</b> | 20              | 30             | 120             | 105            | 25             | 6   | 22.8            | 2.5            | 104            | 62             | 88             | 3              | M8x16          |
|              | 25              | 35             | 120             | 105            | 25             | 8   | 27              | 2.5            |                |                |                |                |                |
| <b>GKR05</b> | 30              | 50             | 143             | 127            | 25             | 8   | 33.3            | 4              | 116            | 80             | 100            | 4              | M8x15          |
|              | 35              | 50             | 143             | 127            | 25             | 10  | 38.3            | 4              |                |                |                |                |                |
| <b>GKR06</b> | 40              | 65             | 170             | 150            | 30             | 12  | 43.3            | 5              | 140            | 100            | 120            | 4              | M10x22         |
|              | 45              | 65             | 170             | 150            | 30             | 14  | 48.8            | 5              |                |                |                |                |                |

|              | b <sub>5</sub> | b <sub>7</sub> | c <sub>5</sub> | e <sub>5</sub> | f <sub>5</sub> | m  | n  | s <sub>5</sub> |
|--------------|----------------|----------------|----------------|----------------|----------------|----|----|----------------|
| <b>GKR03</b> | 60             | 75             | 7              | 90             | 80             | 22 | 20 | 6.6            |
| <b>GKR04</b> | 70             | 90             | 8              | 105            | 95             | 28 | 25 | 9              |
| <b>GKR05</b> | 100            | 100            | 11             | 115            | 138            | 27 | 48 | 9              |
| <b>GKR06</b> | 120            | 125            | 12             | 145            | 164            | 32 | 53 | 11             |

<sup>1)</sup> k<sub>2</sub> !

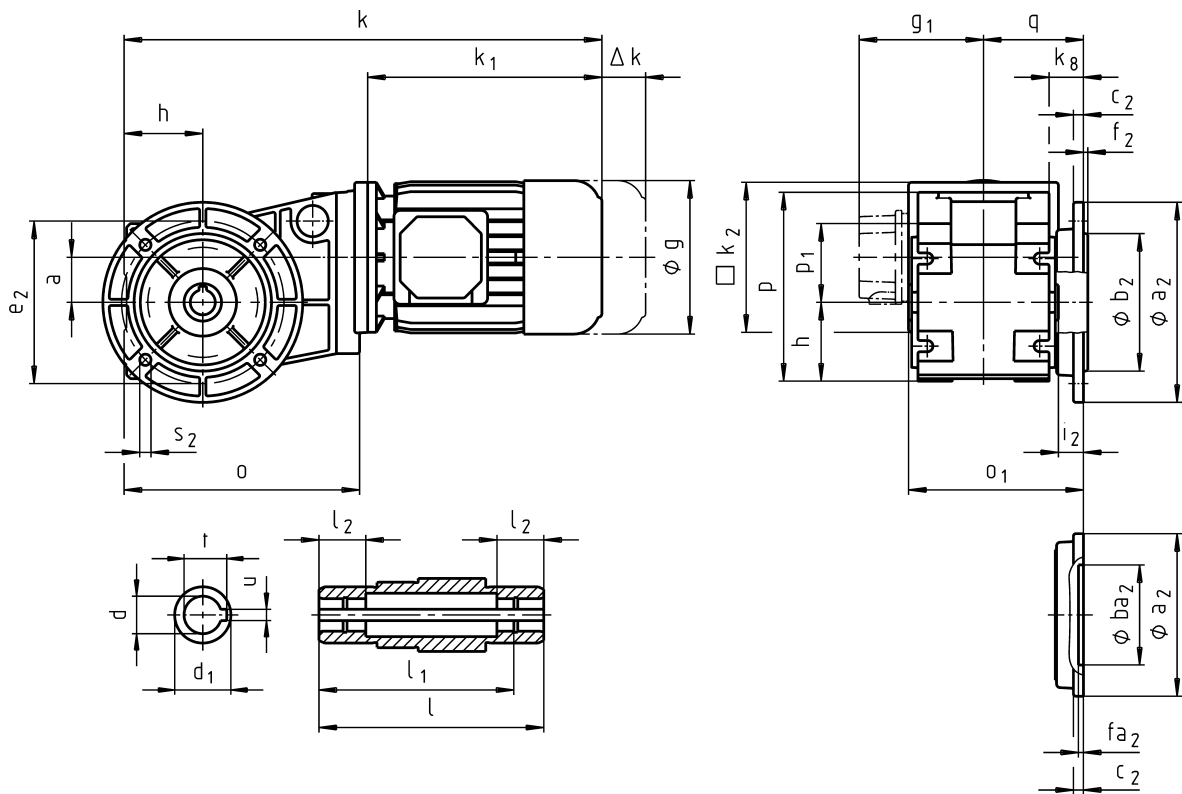
<sup>2)</sup> l<sub>2</sub> !

<sup>3)</sup> d = 25 mm > DIN 6885/3

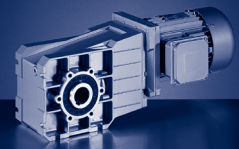


**GKR**  
GKR [mm] - MF□MA

**GKR□□-2M HAK**







|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 | 090C32 | 100C12<br>100C32 | 112C22 |     |
|----------------------|---------|------------------|------------------|--------|--------|--------|------------------|--------|-----|
| <b>g</b>             |         | 123              | 139              |        | 156    |        | 176              | 194    | 218 |
| <b>B<sub>1</sub></b> | MFEMAXX | 100              | 109              |        | 141    |        | 146              | 157    | 167 |
|                      | MFEMABR | 107              | 118              |        | 132    |        | 137              | 147    | 158 |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              |        | 224.5  |        | 274              | 324    | 363 |
| <b>k<sub>2</sub></b> |         | 120              |                  |        | 145    |        | 180              |        | 222 |
|                      | MFEMABR | 40               | 52               |        | 73     |        | 68               | 76     | 90  |
| <b>Δ k</b>           | MFEMAXX |                  |                  |        | 128    |        |                  | 109    | 102 |
|                      | MFEMABR | 170              | 165              |        | 183    |        | 181              | 170    | 183 |
| <b>k</b>             |         |                  |                  |        |        |        |                  |        |     |
| <b>GKR03</b>         |         | 332              |                  |        |        |        |                  |        |     |
| <b>GKR04</b>         |         | 383              | 403              |        | 425    |        |                  |        |     |
| <b>GKR05</b>         |         | 436              | 456              |        | 479    |        | 538              | 588    |     |
| <b>GKR06</b>         |         | 488              | 508              |        | 530    |        | 590              | 640    | 685 |

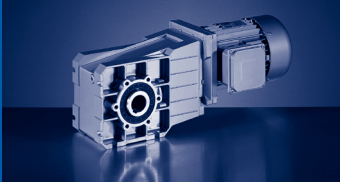
|              | a  | h   | k <sub>g</sub> | o     | p <sup>1)</sup> | p <sub>1</sub> | q     |
|--------------|----|-----|----------------|-------|-----------------|----------------|-------|
| <b>GKR03</b> | 29 | 50  | 35             | 142   | 117             | 48             | 80    |
| <b>GKR04</b> | 36 | 63  | 28             | 189   | 151             | 63             | 80    |
| <b>GKR05</b> | 40 | 80  | 47.5           | 250.5 | 181             | 82             | 105   |
| <b>GKR06</b> | 51 | 100 | 54             | 307   | 226             | 100            | 126.5 |

|              | d <sup>2)</sup> | d <sub>1</sub> | l   | l <sub>1</sub> | l <sub>2</sub> | u   | t <sup>3)</sup> | i <sub>2</sub> | o <sub>1</sub> <sup>1)</sup> | a <sub>2</sub> | b <sub>2</sub> | ba <sub>2</sub> | c <sub>2</sub> | e <sub>2</sub> | f <sub>2</sub> | fa <sub>2</sub> | s <sub>2</sub> |
|--------------|-----------------|----------------|-----|----------------|----------------|-----|-----------------|----------------|------------------------------|----------------|----------------|-----------------|----------------|----------------|----------------|-----------------|----------------|
|              | H7              |                |     |                |                | JS9 | +0,2            |                |                              |                | j7             | H7              |                |                |                |                 |                |
| <b>GKR03</b> | 18              | 30             | 100 | 85             | 22             | 6   | 20.8            | 30             | 130                          | 120            | 80             | -               | 8              | 100            | 3              | -               | 7              |
|              | 20              | 30             | 100 | 85             | 22             | 6   | 22.8            | 30             | 130                          | 110            | -              | 60              | 8              | 87             | -              | 4               | 9              |
| <b>GKR04</b> | 20              | 30             | 120 | 105            | 25             | 6   | 22.8            | 20             | 140                          | 120            | 80             |                 | 8              | 100            | 3              |                 | 7              |
|              | 25              | 35             | 120 | 105            | 25             | 8   | 27              | 20             | 140                          | 160            | 110            |                 | 8              | 130            | 3.5            |                 | 9              |
| <b>GKR05</b> | 30              | 50             | 143 | 127            | 25             | 8   | 33.3            | 33.5           | 176.5                        | 160            | 110            |                 | 12             | 130            | 3.5            |                 | 9              |
|              | 35              | 50             | 143 | 127            | 25             | 10  | 38.3            | 33.5           | 176.5                        | 200            | 130            |                 | 12             | 165            | 3.5            |                 | 11             |
| <b>GKR06</b> | 40              | 65             | 170 | 150            | 30             | 12  | 43.3            | 41.5           | 211.5                        | 200            | 130            |                 | 12             | 165            | 3.5            |                 | 11             |
|              | 45              | 65             | 170 | 150            | 30             | 14  | 48.8            | 41.5           | 211.5                        | 250            | 180            |                 | 12             | 215            | 4              |                 | 14             |

<sup>1)</sup> k<sub>2</sub> !

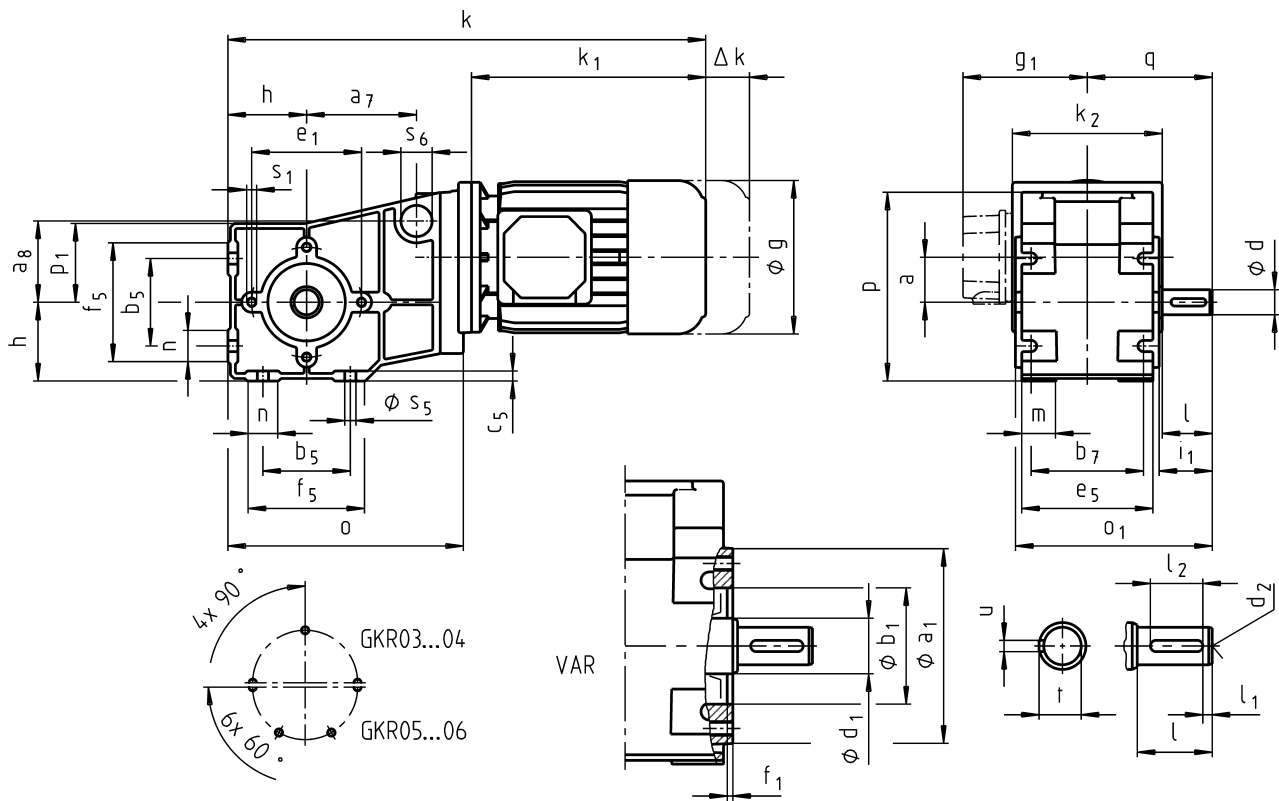
<sup>2)</sup> l<sub>2</sub> !

<sup>3)</sup> d = 25 mm > DIN 6885/3

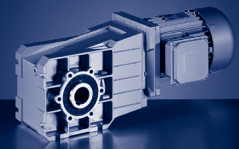


**GKR**  
GKR [mm] - MF□MA

**GKR□□-2M V□R**



5



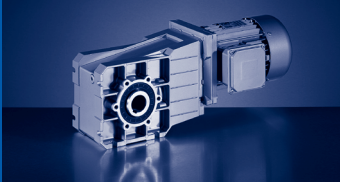
|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 | 090C32 | 100C12<br>100C32 | 112C22 |
|----------------------|---------|------------------|------------------|--------|--------|--------|------------------|--------|
| <b>g</b>             |         | 123              | 139              | 156    |        | 176    | 194              | 218    |
| <b>B1</b>            | MFEMAXX | 100              | 109              | 141    |        | 146    | 157              | 167    |
|                      | MFEMABR | 107              | 118              | 132    |        | 137    | 147              | 158    |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              | 224.5  |        | 274    | 324              | 363    |
| <b>k<sub>2</sub></b> |         | 120              |                  | 145    |        | 180    |                  | 222    |
|                      | MFEMABR | 40               | 52               | 73     |        | 68     | 76               | 90     |
| <b>Δ k</b>           | MFEMAXX |                  |                  | 128    |        |        | 109              | 102    |
|                      | MFEMABR | 170              | 165              | 183    |        | 181    | 170              | 183    |
| <b>k</b>             |         |                  |                  |        |        |        |                  |        |
| <b>GKR03</b>         |         | 332              |                  |        |        |        |                  |        |
| <b>GKR04</b>         |         | 383              | 403              | 425    |        |        |                  |        |
| <b>GKR05</b>         |         | 436              | 456              | 479    |        | 538    | 588              |        |
| <b>GKR06</b>         |         | 488              | 508              | 530    |        | 590    | 640              | 685    |

|              | a  | a <sub>7</sub> | a <sub>8</sub> | h   | o     | p <sup>1)</sup> | p <sub>1</sub> | q     | s <sub>6</sub> |
|--------------|----|----------------|----------------|-----|-------|-----------------|----------------|-------|----------------|
| <b>GKR03</b> | 29 | 66             | 39             | 50  | 142   | 117             | 48             | 90    | 25             |
| <b>GKR04</b> | 36 | 88             | 65             | 63  | 189   | 151             | 63             | 100   | 25             |
| <b>GKR05</b> | 40 |                |                | 80  | 250.5 | 181             | 82             | 131.5 |                |
| <b>GKR06</b> | 51 |                |                | 100 | 307   | 226             | 100            | 155   |                |

|              | d  | d <sub>1</sub> | d <sub>2</sub> | l  | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i <sub>1</sub> | o <sub>1</sub> <sup>1)</sup> | a <sub>1</sub> | b <sub>1</sub> | e <sub>1</sub> | f <sub>1</sub> | s <sub>1</sub> |
|--------------|----|----------------|----------------|----|----------------|----------------|----|------|----------------|------------------------------|----------------|----------------|----------------|----------------|----------------|
|              | k6 |                |                |    |                |                |    |      |                |                              |                | J7             |                |                |                |
| <b>GKR03</b> | 20 | 30             | M6             | 40 | 5              | 28             | 6  | 22.5 | 42.5           | 137.5                        | 85             | 55             | 70             | 2.5            | M6x12          |
| <b>GKR04</b> | 20 | 30             | M6             | 40 | 5              | 28             | 6  | 22.5 | 42.5           | 158                          | 104            | 62             | 88             | 3              | M8x16          |
| <b>GKR05</b> | 30 | 50             | M10            | 60 | 6              | 45             | 8  | 33   | 64             | 199                          | 116            | 80             | 100            | 4              | M8x15          |
| <b>GKR06</b> | 35 | 65             | M12            | 70 | 7              | 56             | 10 | 38   | 75             | 235                          | 140            | 100            | 120            | 4              | M10x22         |

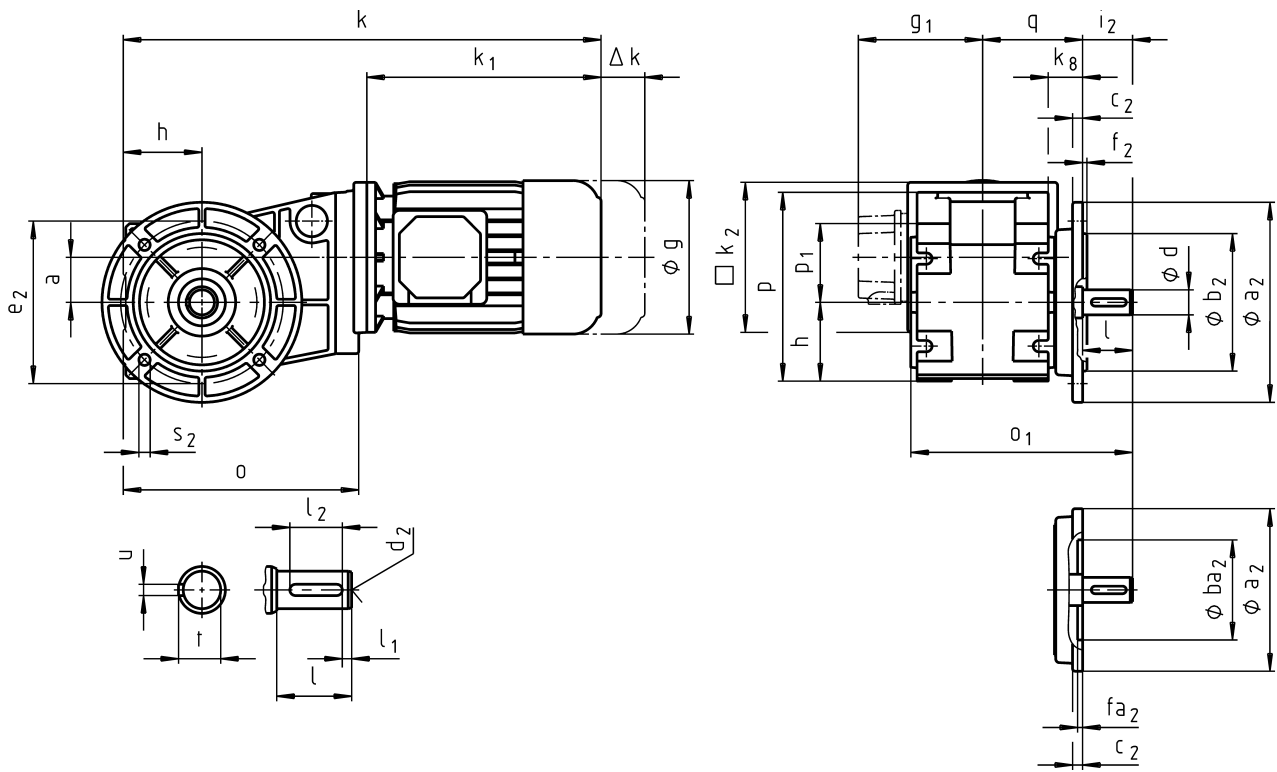
|              | b <sub>5</sub> | b <sub>7</sub> | c <sub>5</sub> | e <sub>5</sub> | f <sub>5</sub> | m  | n  | s <sub>5</sub> |
|--------------|----------------|----------------|----------------|----------------|----------------|----|----|----------------|
| <b>GKR03</b> | 60             | 75             | 7              | 90             | 80             | 22 | 20 | 6.6            |
| <b>GKR04</b> | 70             | 90             | 8              | 105            | 95             | 28 | 25 | 9              |
| <b>GKR05</b> | 100            | 100            | 11             | 115            | 138            | 27 | 48 | 9              |
| <b>GKR06</b> | 120            | 125            | 12             | 145            | 164            | 32 | 53 | 11             |

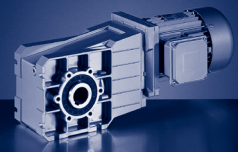
<sup>1)</sup> k<sub>2</sub> !



**GKR**  
GKR [mm] - MF□MA

**GKR□□-2M VAK**



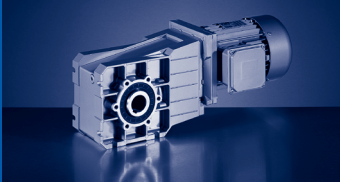


|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 | 090C32 | 100C12<br>100C32 | 112C22 |
|----------------------|---------|------------------|------------------|--------|--------|--------|------------------|--------|
| <b>g</b>             |         | 123              | 139              | 156    |        | 176    | 194              | 218    |
| <b>B1</b>            | MFEMAXX | 100              | 109              | 141    |        | 146    | 157              | 167    |
|                      | MFEMABR | 107              | 118              | 132    |        | 137    | 147              | 158    |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              | 224.5  |        | 274    | 324              | 363    |
| <b>k<sub>2</sub></b> |         | 120              |                  | 145    |        | 180    |                  | 222    |
|                      | MFEMABR | 40               | 52               | 73     |        | 68     | 76               | 90     |
| <b>Δ k</b>           | MFEMAXX |                  |                  | 128    |        |        | 109              | 102    |
|                      | MFEMABR | 170              | 165              | 183    |        | 181    | 170              | 183    |
| <b>k</b>             |         |                  |                  |        |        |        |                  |        |
| <b>GKR03</b>         |         | 332              |                  |        |        |        |                  |        |
| <b>GKR04</b>         |         | 383              | 403              | 425    |        |        |                  |        |
| <b>GKR05</b>         |         | 436              | 456              | 479    |        | 538    | 588              |        |
| <b>GKR06</b>         |         | 488              | 508              | 530    |        | 590    | 640              | 685    |

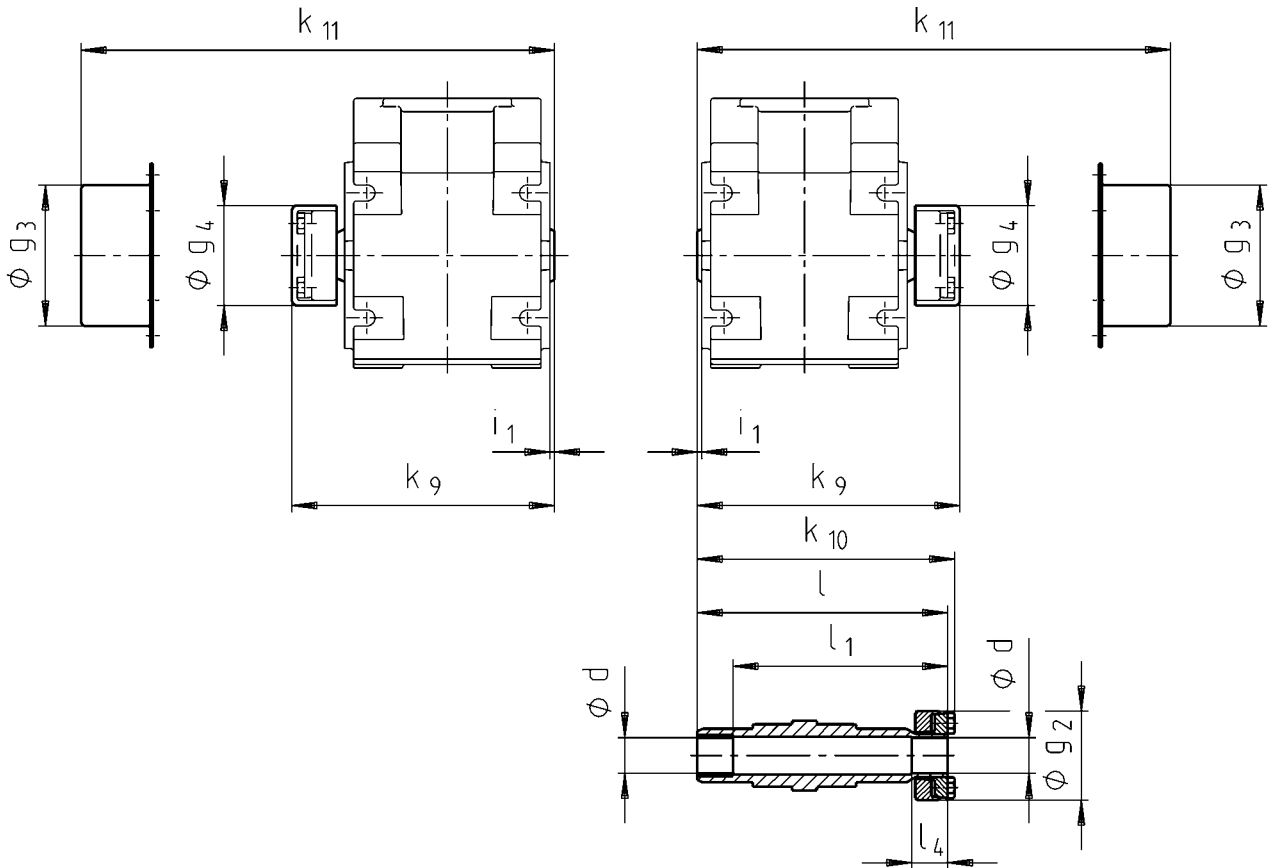
|              | a  | h   | k <sub>g</sub> | o     | p <sup>1)</sup> | p <sub>1</sub> | q     |
|--------------|----|-----|----------------|-------|-----------------|----------------|-------|
| <b>GKR03</b> | 29 | 50  | 35             | 142   | 117             | 48             | 80    |
| <b>GKR04</b> | 36 | 63  | 28             | 189   | 151             | 63             | 80.5  |
| <b>GKR05</b> | 40 | 80  | 47.5           | 250.5 | 181             | 82             | 105   |
| <b>GKR06</b> | 51 | 100 | 54             | 307   | 226             | 100            | 126.5 |

|              | d  | d <sub>2</sub> | l  | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i <sub>2</sub> | o <sub>1</sub> <sup>1)</sup> | a <sub>2</sub> | b <sub>2</sub> | ba <sub>2</sub> | c <sub>2</sub> | e <sub>2</sub> | f <sub>2</sub> | fa <sub>2</sub> | s <sub>2</sub> |
|--------------|----|----------------|----|----------------|----------------|----|------|----------------|------------------------------|----------------|----------------|-----------------|----------------|----------------|----------------|-----------------|----------------|
|              | k6 |                |    |                |                |    |      |                |                              |                | j7             | H7              |                |                |                |                 |                |
| <b>GKR03</b> | 20 | M6             | 40 | 5              | 28             | 6  | 22.5 | 40             | 167.5                        | 120<br>110     | 80<br>-        | -<br>60         | 8<br>8         | 100<br>87      | 3<br>-         | -<br>4          | 7<br>9         |
| <b>GKR04</b> | 20 | M6             | 40 | 5              | 28             | 6  | 22.5 | 40             | 178                          | 120<br>160     | 80<br>110      |                 | 8<br>8         | 100<br>130     | 3<br>3.5       |                 | 7<br>9         |
| <b>GKR05</b> | 30 | M10            | 60 | 6              | 45             | 8  | 33   | 60             | 232.5                        | 160<br>200     | 110<br>130     |                 | 12<br>12       | 130<br>165     | 3.5<br>3.5     |                 | 9<br>11        |
| <b>GKR06</b> | 35 | M12            | 70 | 7              | 56             | 10 | 38   | 70             | 276.5                        | 200<br>250     | 130<br>180     |                 | 12<br>12       | 165<br>215     | 3.5<br>4       |                 | 11<br>14       |

<sup>1)</sup> k<sub>2</sub> !



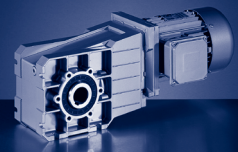
**Hollow shaft with shrink disc**



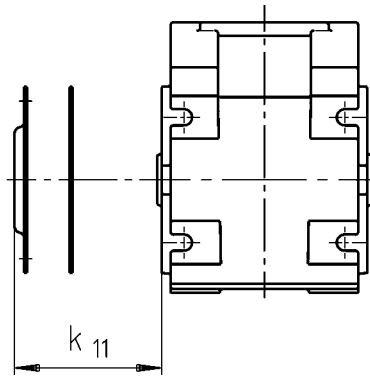
|              | d <sup>1)</sup> | g <sub>2</sub> | g <sub>3</sub> | g <sub>4</sub> | i <sub>1</sub> | k <sub>9</sub> | k <sub>10</sub> | k <sub>11</sub> | l   | l <sub>1</sub> | l <sub>4</sub> |
|--------------|-----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----|----------------|----------------|
|              | h6              |                |                |                |                |                |                 |                 |     |                |                |
| <b>GKR03</b> | 20              | 50             | 65             | 54             | 2.5            | 126            | 124             | 138             | 120 | 100            | 20             |
| <b>GKR04</b> |                 |                |                |                |                | 146            | 144             | 158             | 144 | 120            |                |
| <b>GKR05</b> | 30<br>35        | 80             | 90             | 84             | 4.0            | 176            | 177             | 182             | 171 | 151            | 28             |
| <b>GKR06</b> | 40              | 90             | 100            | 94             | 5.0            | 202            | 210             | 214             | 204 | 174            | 30             |

<sup>1)</sup> Machine shaft design.

- ▶ Output flange and hollow shaft with shrink disc (output version SAK) are not possible in the same location. For additional dimensions see output version H□□.
- ▶ Ensure that the strength of the machine shaft material is adequate in shrink disc designs.  
When using typical steels (e.g. C45, 42CrMo4), the torques listed in the selection tables can be used without restriction. Please consult us if you wish to use material that is considerably weaker. Medium surface roughness Rz must not exceed 15 µm (machining is sufficient).



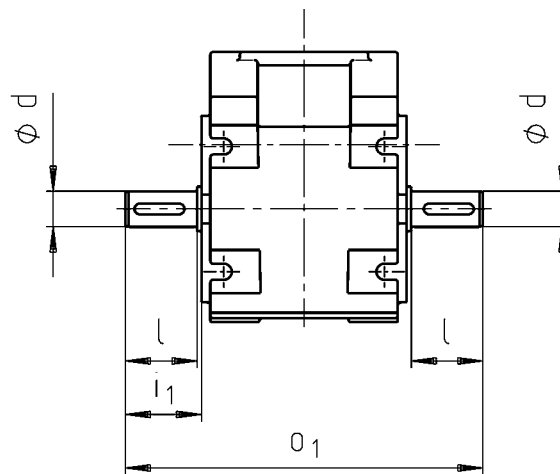
### Hoseproof hollow shaft cover



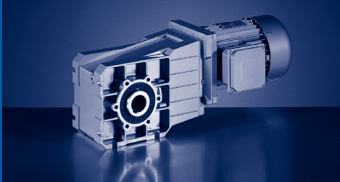
► Cover including gasket

|       | $k_{11}$<br>[mm] |
|-------|------------------|
| GKR03 | 9                |
| GKR04 | 10               |
| GKR05 | 11               |

### Gearbox with 2nd output shaft end



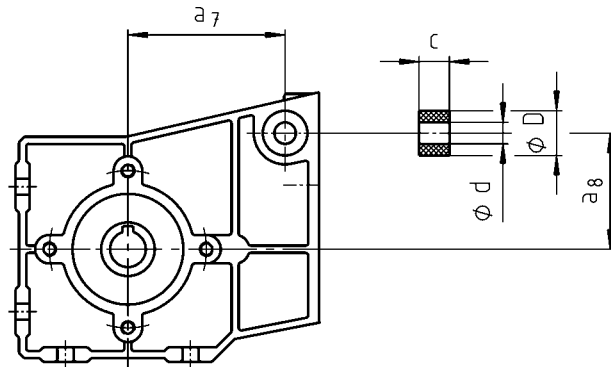
|       | $d$<br>k6<br>[mm] | $l$<br>[mm] | $i_1$<br>[mm] | $o_1$<br>[mm] |
|-------|-------------------|-------------|---------------|---------------|
| GKR03 | 20                | 40          | 42.5          | 180           |
| GKR04 | 30                | 60          | 64.0          | 200           |
| GKR05 | 35                | 70          | 75.0          | 263           |



# GKR

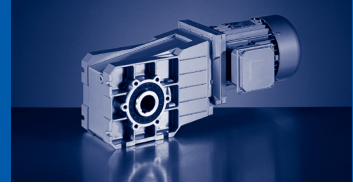
GKR & [mm] - Additional dimensions

## Rubber buffer for torque plate



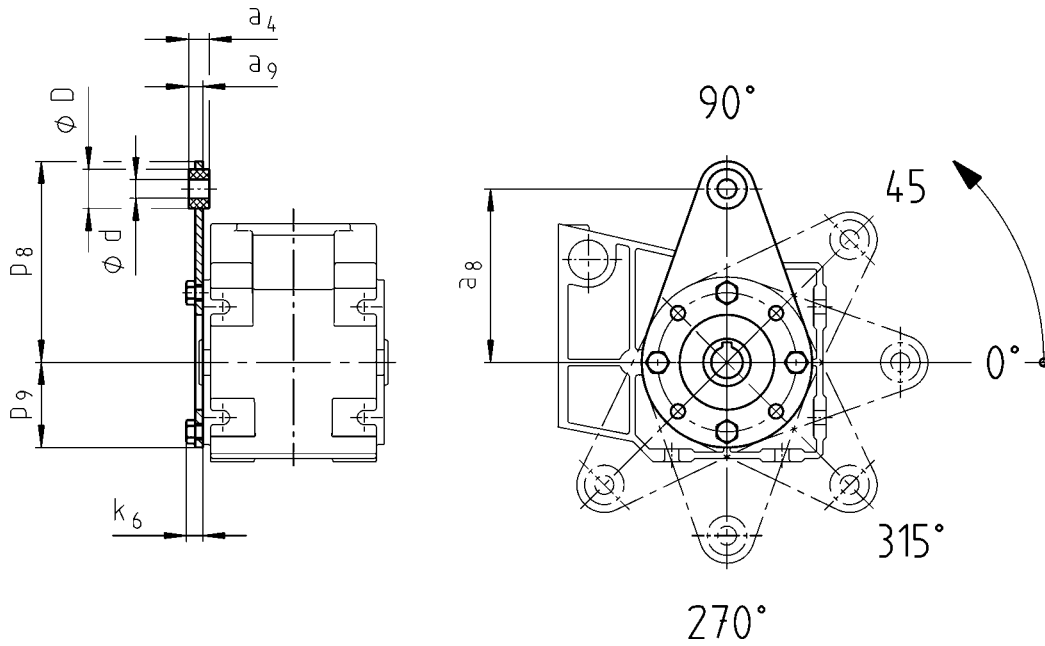
|       | d  | D  | c    | a <sub>7</sub> | a <sub>8</sub> |
|-------|----|----|------|----------------|----------------|
| GKR03 | 10 | 25 | 13.0 | 66.0           | 39             |
| GKR04 |    |    |      | 88.0           | 65             |



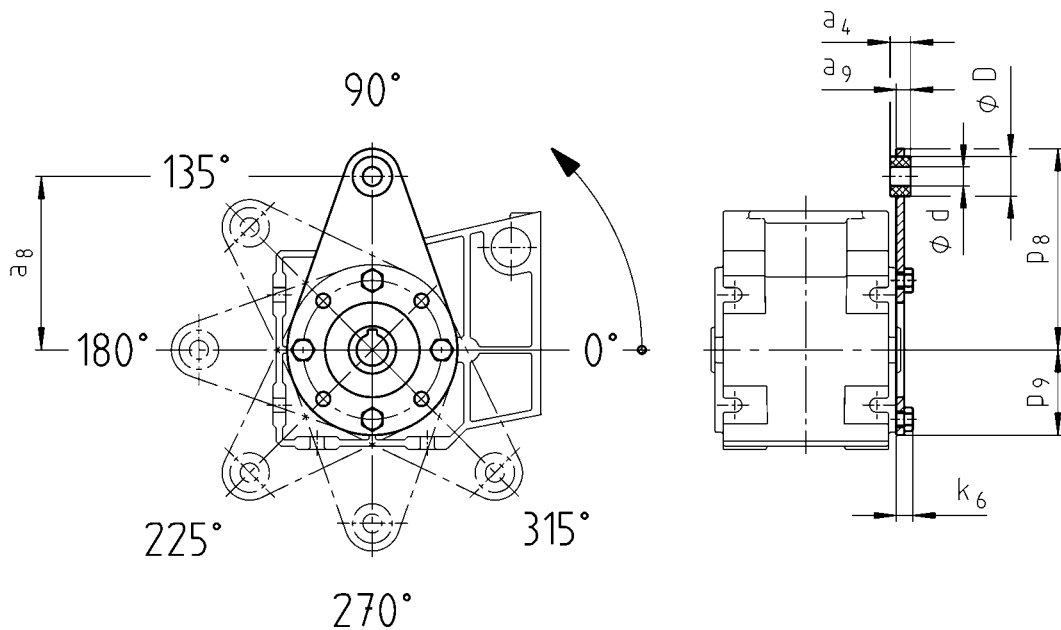


### Torque plate on threaded pitch circle

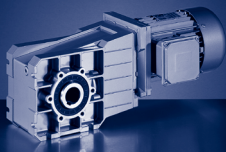
In position 3



In position 5

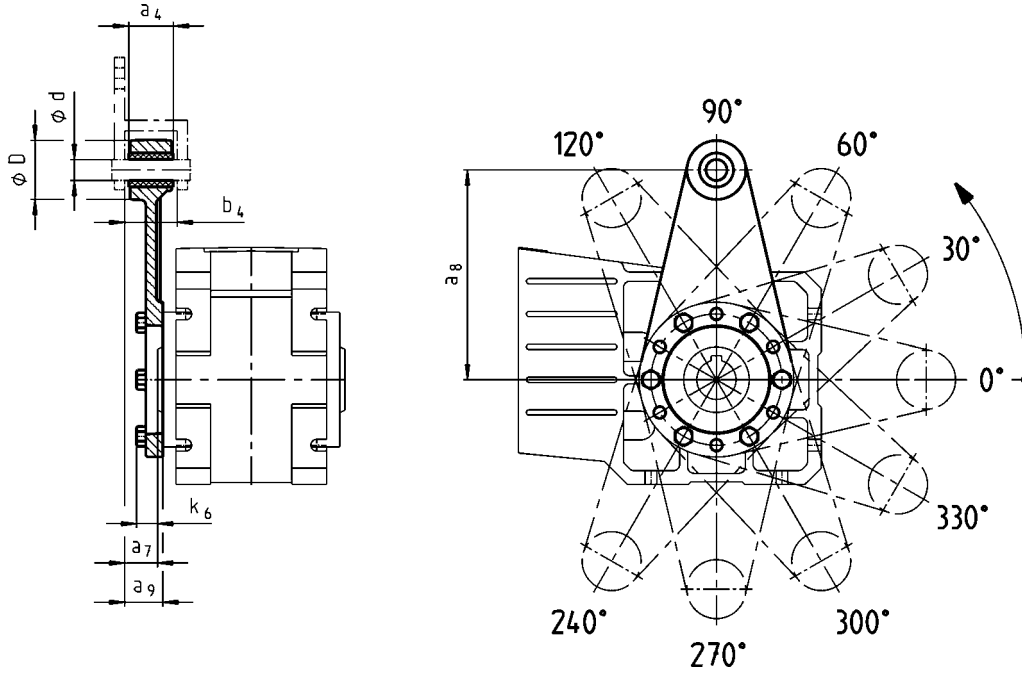


|              | a <sub>4</sub> | a <sub>8</sub> | a <sub>9</sub> | d  | D  | k <sub>6</sub> | p <sub>8</sub> | p <sub>9</sub> |
|--------------|----------------|----------------|----------------|----|----|----------------|----------------|----------------|
| <b>GKR03</b> | 12             | 100            | 8.0            | 8  | 20 | 9              | 115            | 42             |
| <b>GKR04</b> | 13             | 110            | 9.0            | 10 | 25 | 11             | 128            | 54             |

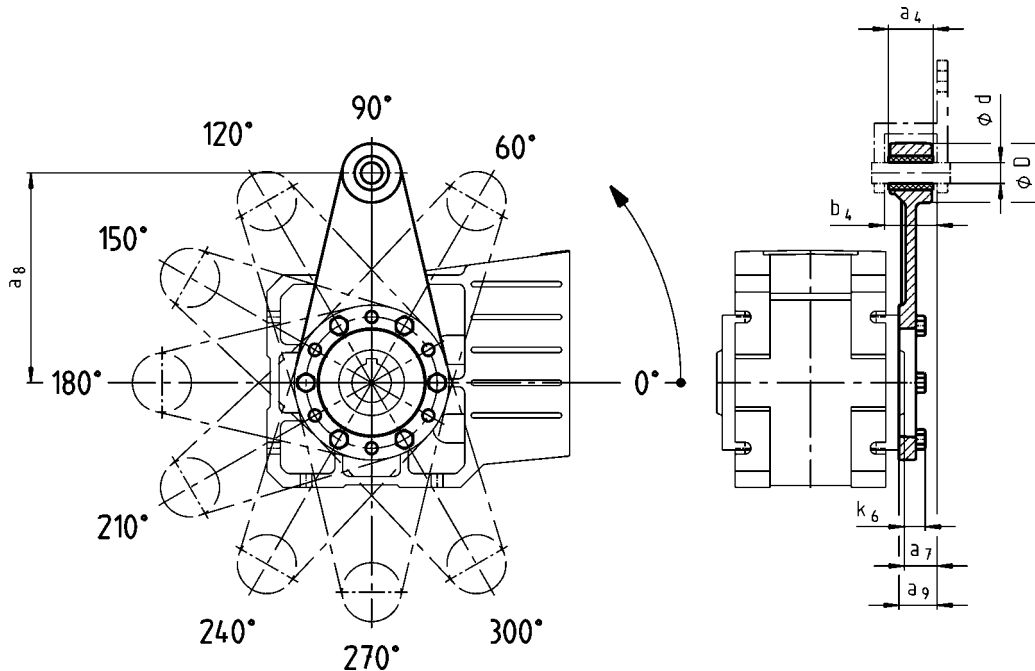


**Torque plate on threaded pitch circle**

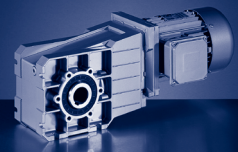
In position 3



In position 5

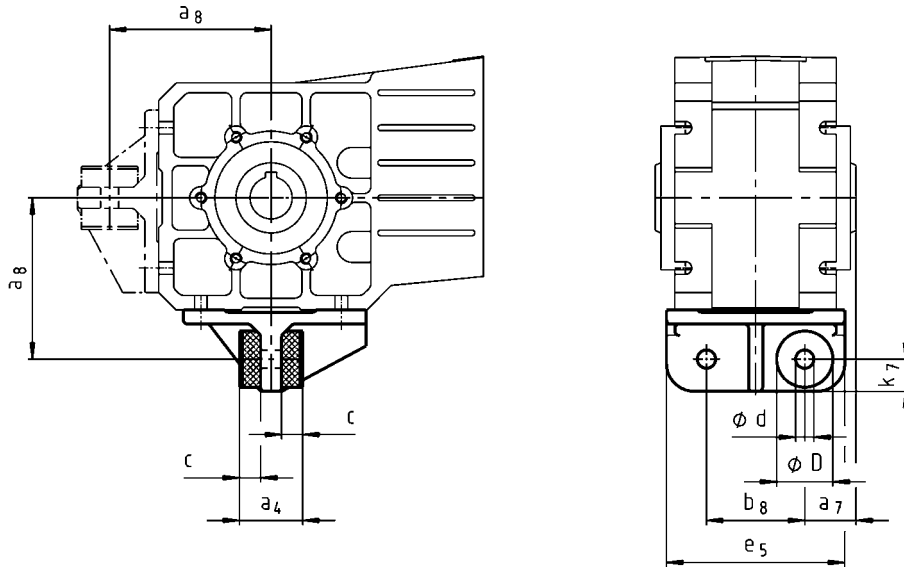


|              | a <sub>4</sub> | a <sub>7</sub> | a <sub>8</sub> | a <sub>9</sub> | b <sub>4</sub> | d  | D  | k <sub>6</sub> |
|--------------|----------------|----------------|----------------|----------------|----------------|----|----|----------------|
| <b>GKR05</b> | 34             | 23.5           | 160            | 27.5           | 38.5           | 16 | 45 | 15             |
| <b>GKR06</b> | 40             | 28.0           | 200            | 33.0           | 44.5           | 20 | 50 | 18             |

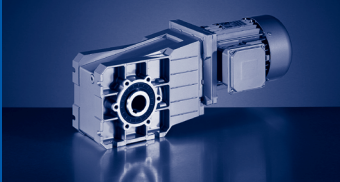


### Torque plate at housing foot

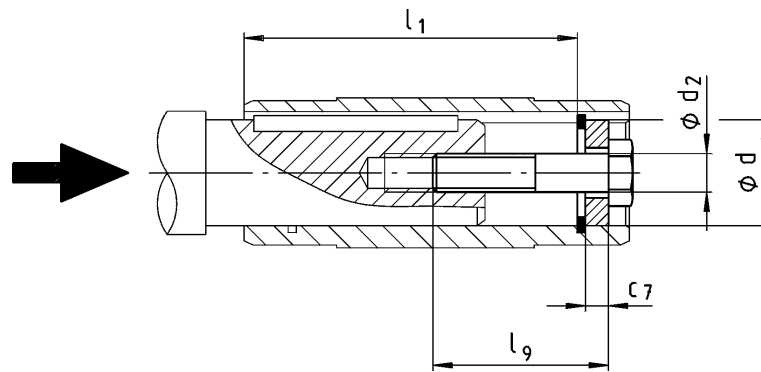
In position 4 or 6



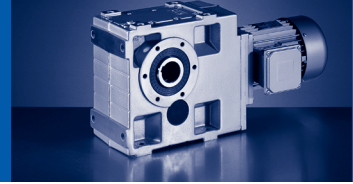
|              | a <sub>4</sub> | a <sub>7</sub> | a <sub>8</sub> | b <sub>8</sub> | c    | d  | D  | e <sub>5</sub> | k <sub>7</sub> |
|--------------|----------------|----------------|----------------|----------------|------|----|----|----------------|----------------|
| <b>GKR05</b> | 45             | 36.5           | 115            | 70             | 15.0 | 13 | 40 | 127            | 25             |
| <b>GKR06</b> | 72             | 45.0           | 145            | 80             | 27.0 | 17 | 50 | 145            | 30             |



**Mounting set for hollow shaft circlip - Proposed design for auxiliary tools**



|       | d        | l <sub>1</sub> | d <sub>2</sub> | l <sub>9</sub> | c <sub>7</sub> |
|-------|----------|----------------|----------------|----------------|----------------|
|       | H7       |                |                |                |                |
| GKR03 | 18<br>20 | 85             | M6             | 40             | 4              |
| GKR04 | 20<br>25 | 105            | M10            |                | 5              |
| GKR05 | 30<br>35 | 127            | M12            | 50             | 7              |
| GKR06 | 40<br>45 | 150            | M16            | 60             | 8<br>9         |



## Permissible radial and axial forces at output

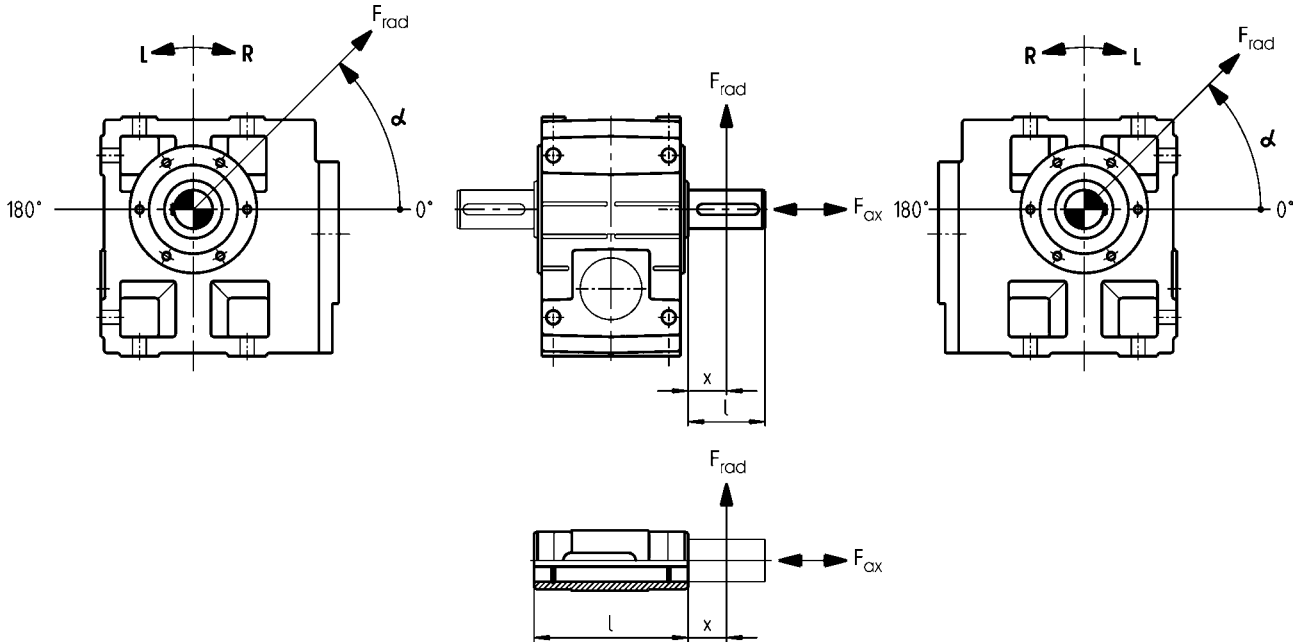
### Permissible radial force

$$F_{rad,per} = \min(f_w \times f_\alpha \times F_{rad,max}; f_w \times F_{rad,max} \text{ at } n_2 \leq 16 \text{ r/min})$$

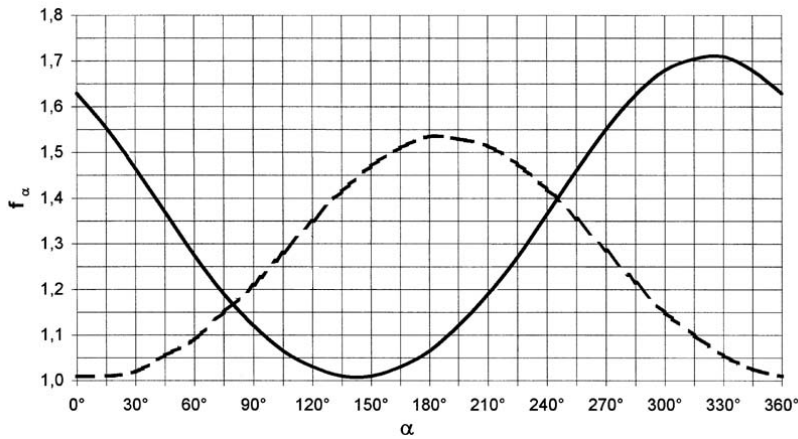
### Permissible axial force

$$F_{ax,per} = F_{ax,max} \text{ if } F_{rad} = 0$$

If  $F_{rad}$  and  $F_{ax} \neq 0$ ; please contact Lenze.

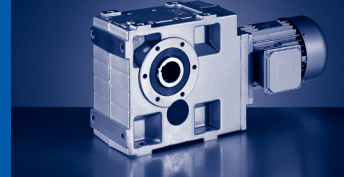


### Effective direction factor $f_\alpha$ at output shaft



—— Direction of rotation R  
- - - Direction of rotation L



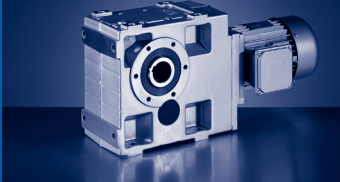


GKS□□-3/4□ V□R

| Size   | $n_2$ [r/min] |               |               |               |               |               |               |               |               |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|  | 630           | 400           | 250           | 160           | 100           | 63            | 40            | 25            | ≤16           |
| <b>Max. radial force, Solid shaft without flange</b> |               |               |               |               |               |               |               |               |               |
|  | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ |
|  | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           |
| <b>GKS04</b>   | 2400          | 3000          | 3400          | 3600          | 3600          | 3600          | 3600          | 3600          | 3600          |
| <b>GKS05</b>   | 2200          | 2800          | 3200          | 3600          | 4100          | 4900          | 5800          | 5800          | 5800          |
| <b>GKS06</b>   | 2700          | 3700          | 4300          | 4900          | 5300          | 6200          | 7900          | 9000          | 9000          |
| <b>GKS07</b>   |               | 4000          | 4900          | 5800          | 6600          | 8000          | 9600          | 12000         | 12000         |
| <b>GKS09<sup>1)</sup></b>                            |               | 6200          | 6400          | 7100          | 8400          | 9500          | 11800         | 16000         | 18000         |
| <b>GKS11<sup>1)</sup></b>                            |               | 7100          | 7500          | 8200          | 10000         | 11200         | 13000         | 19000         | 23000         |
| <b>GKS14<sup>1)</sup></b>                            |               | 57900         | 61000         | 64100         | 65000         | 65000         | 65000         | 65000         | 65000         |
| <b>Max. axial force, Solid shaft without flange</b>  |               |               |               |               |               |               |               |               |               |
|  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  |
|  | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           |
| <b>GKS04</b>   | 3300          | 4200          | 5000          | 5500          | 5500          | 5500          | 5500          | 5500          | 5500          |
| <b>GKS05</b>   | 2800          | 3500          | 4240          | 5090          | 6160          | 6600          | 6600          | 6600          | 6600          |
| <b>GKS06</b>   | 3500          | 4440          | 5580          | 6930          | 8710          | 10000         | 10000         | 10000         | 10000         |
| <b>GKS07</b>   |               | 4900          | 6230          | 7820          | 9940          | 12600         | 14000         | 14000         | 14000         |
| <b>GKS09<sup>1)</sup></b>                            |               | 6500          | 7400          | 8000          | 10500         | 13000         | 17000         | 21000         | 21000         |
| <b>GKS11<sup>1)</sup></b>                            |               | 7000          | 8000          | 9200          | 12000         | 14500         | 18500         | 27000         | 27000         |
| <b>GKS14<sup>1)</sup></b>                            |               | 35000         | 35000         | 35000         | 35000         | 35000         | 35000         | 35000         | 35000         |

<sup>1)</sup> Reinforced output shaft bearings are available on request for V□R versions.

- ▶ Application of force  $F_{rad}$ : centre of shaft journal ( $x = l/2$ )
- ▶  $F_{ax,max}$  only valid with  $F_{rad} = 0$



# GKS

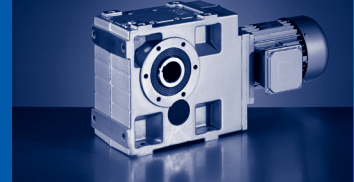
GKS [N] - forces

## GKS□□-3/4□ V□K

| Size  | n <sub>2</sub> [r/min] |                      |                      |                      |                      |                      |                      |                      |                      |
|---|------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|   | 630                    | 400                  | 250                  | 160                  | 100                  | 63                   | 40                   | 25                   | ≤16                  |
| <b>Max. radial force, Solid shaft with flange</b> |                        |                      |                      |                      |                      |                      |                      |                      |                      |
|   | F <sub>rad,max</sub>   | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> |
|   | [N]                    | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  |
| GKS04   | 3100                   | 3800                 | 4300                 | 4600                 | 4600                 | 4600                 | 4600                 | 4600                 | 4600                 |
| GKS05   | 3800                   | 4640                 | 5420                 | 6280                 | 7000                 | 7000                 | 7000                 | 7000                 | 7000                 |
| GKS06   | 4700                   | 6400                 | 7500                 | 8800                 | 9800                 | 10000                | 10000                | 10000                | 10000                |
| GKS07   |                        | 7000                 | 8250                 | 9630                 | 11000                | 13000                | 14000                | 14000                | 14000                |
| GKS09   |                        | 9900                 | 10500                | 12000                | 14000                | 15000                | 15000                | 15000                | 15000                |
| GKS11   |                        | 14500                | 16000                | 17600                | 21000                | 24500                | 28000                | 30000                | 30000                |
| GKS14   |                        | 20500                | 23700                | 27200                | 31300                | 35000                | 41000                | 43000                | 43000                |
| <b>Max. axial force, Solid shaft with flange</b>  |                        |                      |                      |                      |                      |                      |                      |                      |                      |
|   | F <sub>ax,max</sub>    | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  |
|   | [N]                    | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  |
| GKS04   | 3300                   | 4200                 | 4400                 | 4400                 | 4400                 | 4400                 | 4400                 | 4400                 | 4400                 |
| GKS05   | 2900                   | 3630                 | 4440                 | 5420                 | 6600                 | 6600                 | 6600                 | 6600                 | 6600                 |
| GKS06   | 3700                   | 4660                 | 5880                 | 7320                 | 9230                 | 10000                | 10000                | 10000                | 10000                |
| GKS07   |                        | 5700                 | 7000                 | 8500                 | 10400                | 11500                | 11500                | 11500                | 11500                |
| GKS09   |                        | 6000                 | 6600                 | 7600                 | 10000                | 12000                | 15000                | 17000                | 17000                |
| GKS11   |                        | 7000                 | 7500                 | 8500                 | 10500                | 13000                | 17500                | 27000                | 27000                |
| GKS14   |                        | 8400                 | 10000                | 11500                | 13000                | 15000                | 19000                | 28000                | 35000                |

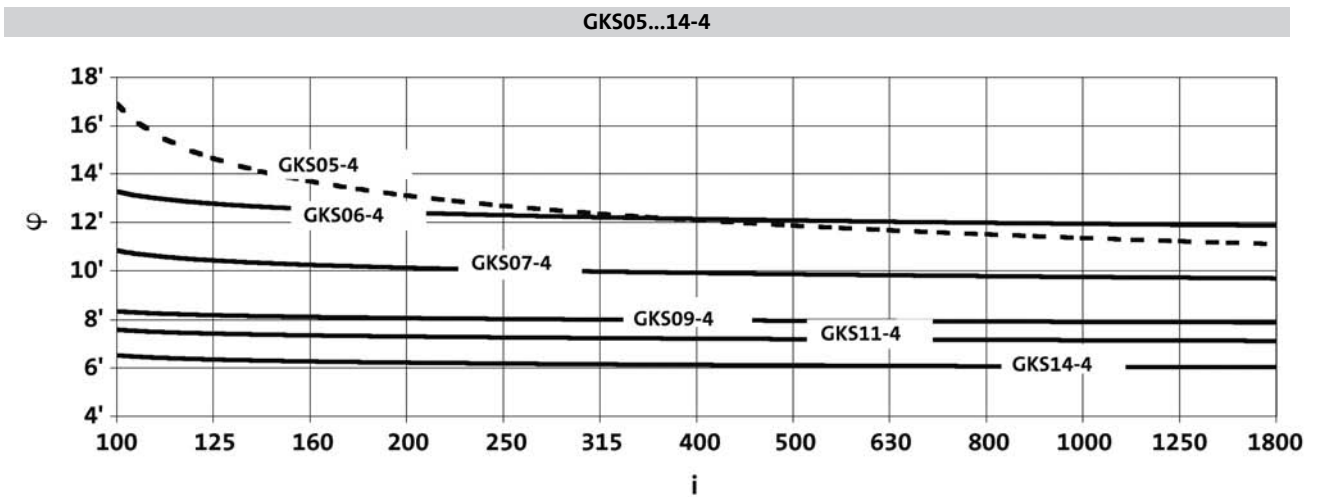
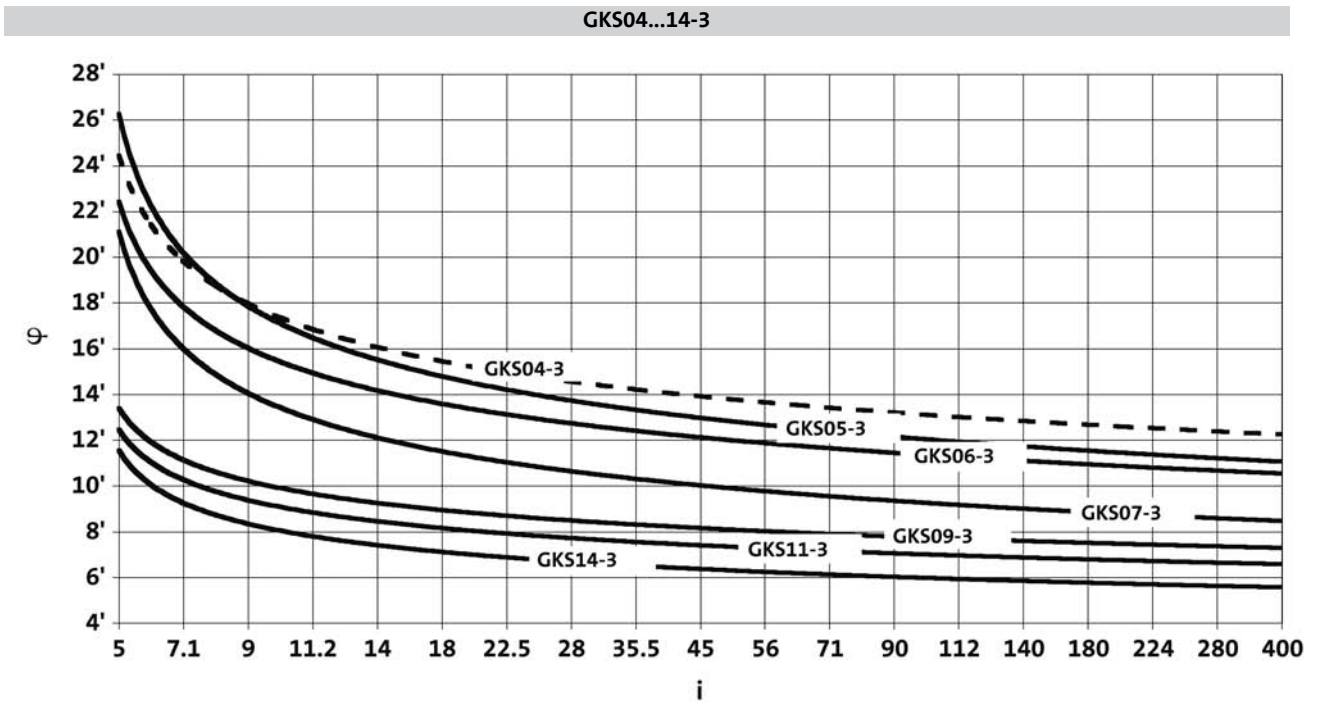
- ▶ Application of force F<sub>rad</sub>: centre of shaft journal (x = l/2)
- ▶ F<sub>ax,max</sub> only valid with F<sub>rad</sub> = 0

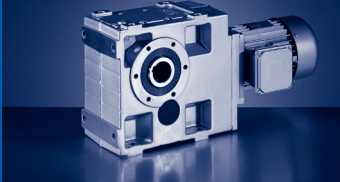




## Output backlash in angular minutes

- ▶ Backlash  $\varphi$  depending on ratio  $i$





## GKS

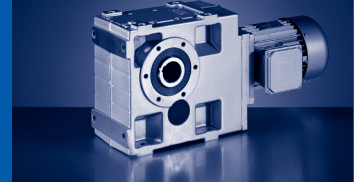
GKS [kgcm<sup>2</sup>] - moments of inertia

### GKS□□-3

► Moment of inertia (J) depending on ratio i

| Gearbox |   |                      | GKS04 | Gearbox |   |                      | GKS05 |
|---------|---|----------------------|-------|---------|---|----------------------|-------|
| 5.123   | J | [kgcm <sup>2</sup> ] | 1.170 | 6.863   | J | [kgcm <sup>2</sup> ] | 1.900 |
| 7.025   | J | [kgcm <sup>2</sup> ] | 0.676 | 9.412   | J | [kgcm <sup>2</sup> ] | 1.170 |
| 8.167   | J | [kgcm <sup>2</sup> ] | 0.863 | 10.569  | J | [kgcm <sup>2</sup> ] | 1.600 |
| 8.991   | J | [kgcm <sup>2</sup> ] | 0.444 | 11.667  | J | [kgcm <sup>2</sup> ] | 1.647 |
| 11.730  | J | [kgcm <sup>2</sup> ] | 0.729 | 13.176  | J | [kgcm <sup>2</sup> ] | 0.711 |
| 13.067  | J | [kgcm <sup>2</sup> ] | 0.701 | 14.494  | J | [kgcm <sup>2</sup> ] | 1.045 |
| 14.333  | J | [kgcm <sup>2</sup> ] | 0.346 | 16.000  | J | [kgcm <sup>2</sup> ] | 1.040 |
| 16.087  | J | [kgcm <sup>2</sup> ] | 0.443 | 17.054  | J | [kgcm <sup>2</sup> ] | 1.505 |
| 17.920  | J | [kgcm <sup>2</sup> ] | 0.428 | 19.216  | J | [kgcm <sup>2</sup> ] | 1.474 |
| 20.588  | J | [kgcm <sup>2</sup> ] | 0.302 | 23.388  | J | [kgcm <sup>2</sup> ] | 0.964 |
| 22.522  | J | [kgcm <sup>2</sup> ] | 0.262 | 26.353  | J | [kgcm <sup>2</sup> ] | 0.948 |
| 25.088  | J | [kgcm <sup>2</sup> ] | 0.254 | 29.931  | J | [kgcm <sup>2</sup> ] | 0.674 |
| 28.727  | J | [kgcm <sup>2</sup> ] | 0.182 | 32.744  | J | [kgcm <sup>2</sup> ] | 0.584 |
| 32.000  | J | [kgcm <sup>2</sup> ] | 0.177 | 36.894  | J | [kgcm <sup>2</sup> ] | 0.576 |
| 35.191  | J | [kgcm <sup>2</sup> ] | 0.136 | 41.765  | J | [kgcm <sup>2</sup> ] | 0.419 |
| 39.200  | J | [kgcm <sup>2</sup> ] | 0.132 | 47.059  | J | [kgcm <sup>2</sup> ] | 0.414 |
| 44.240  | J | [kgcm <sup>2</sup> ] | 0.090 | 51.162  | J | [kgcm <sup>2</sup> ] | 0.321 |
| 50.943  | J | [kgcm <sup>2</sup> ] | 0.181 | 57.647  | J | [kgcm <sup>2</sup> ] | 0.317 |
| 56.976  | J | [kgcm <sup>2</sup> ] | 0.061 | 66.592  | J | [kgcm <sup>2</sup> ] | 0.200 |
| 64.978  | J | [kgcm <sup>2</sup> ] | 0.132 | 75.033  | J | [kgcm <sup>2</sup> ] | 0.198 |
| 72.210  | J | [kgcm <sup>2</sup> ] | 0.040 | 82.833  | J | [kgcm <sup>2</sup> ] | 0.145 |
| 79.598  | J | [kgcm <sup>2</sup> ] | 0.103 | 93.333  | J | [kgcm <sup>2</sup> ] | 0.144 |
| 90.491  | J | [kgcm <sup>2</sup> ] | 0.027 | 107.196 | J | [kgcm <sup>2</sup> ] | 0.091 |
| 100.067 | J | [kgcm <sup>2</sup> ] | 0.069 | 120.784 | J | [kgcm <sup>2</sup> ] | 0.091 |
| 111.467 | J | [kgcm <sup>2</sup> ] | 0.069 | 130.097 | J | [kgcm <sup>2</sup> ] | 0.067 |
| 128.874 | J | [kgcm <sup>2</sup> ] | 0.048 | 146.588 | J | [kgcm <sup>2</sup> ] | 0.066 |
| 143.556 | J | [kgcm <sup>2</sup> ] | 0.048 | 166.276 | J | [kgcm <sup>2</sup> ] | 0.043 |
| 163.332 | J | [kgcm <sup>2</sup> ] | 0.032 | 187.353 | J | [kgcm <sup>2</sup> ] | 0.042 |
| 181.939 | J | [kgcm <sup>2</sup> ] | 0.032 | 211.200 | J | [kgcm <sup>2</sup> ] | 0.081 |
| 204.682 | J | [kgcm <sup>2</sup> ] | 0.022 | 227.484 | J | [kgcm <sup>2</sup> ] | 0.060 |
| 228.000 | J | [kgcm <sup>2</sup> ] | 0.022 | 256.320 | J | [kgcm <sup>2</sup> ] | 0.060 |
| 269.660 | J | [kgcm <sup>2</sup> ] | 0.014 | 290.745 | J | [kgcm <sup>2</sup> ] | 0.038 |
| 300.381 | J | [kgcm <sup>2</sup> ] | 0.014 | 327.600 | J | [kgcm <sup>2</sup> ] | 0.038 |

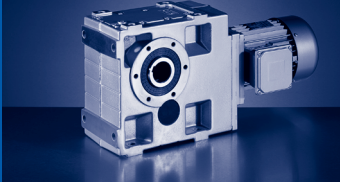
- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.



► Moment of inertia (J) depending on ratio i

| Gearbox |   |                      | GKS06 | Gearbox |   |                      | GKS07  |
|---------|---|----------------------|-------|---------|---|----------------------|--------|
| 6.485   | J | [kgcm <sup>2</sup> ] | 5.870 | 5.955   | J | [kgcm <sup>2</sup> ] | 19.300 |
| 9.196   | J | [kgcm <sup>2</sup> ] | 5.048 | 8.254   | J | [kgcm <sup>2</sup> ] | 11.800 |
| 10.147  | J | [kgcm <sup>2</sup> ] | 4.858 | 9.171   | J | [kgcm <sup>2</sup> ] | 16.000 |
| 11.382  | J | [kgcm <sup>2</sup> ] | 2.492 | 10.124  | J | [kgcm <sup>2</sup> ] | 15.882 |
| 12.612  | J | [kgcm <sup>2</sup> ] | 3.199 | 11.378  | J | [kgcm <sup>2</sup> ] | 7.019  |
| 14.824  | J | [kgcm <sup>2</sup> ] | 4.287 | 12.711  | J | [kgcm <sup>2</sup> ] | 10.164 |
| 16.699  | J | [kgcm <sup>2</sup> ] | 4.163 | 14.798  | J | [kgcm <sup>2</sup> ] | 14.306 |
| 17.809  | J | [kgcm <sup>2</sup> ] | 2.126 | 16.674  | J | [kgcm <sup>2</sup> ] | 13.965 |
| 20.329  | J | [kgcm <sup>2</sup> ] | 2.794 | 17.270  | J | [kgcm <sup>2</sup> ] | 7.258  |
| 22.902  | J | [kgcm <sup>2</sup> ] | 2.729 | 20.511  | J | [kgcm <sup>2</sup> ] | 9.084  |
| 26.017  | J | [kgcm <sup>2</sup> ] | 1.941 | 23.111  | J | [kgcm <sup>2</sup> ] | 8.906  |
| 28.461  | J | [kgcm <sup>2</sup> ] | 1.666 | 25.244  | J | [kgcm <sup>2</sup> ] | 6.716  |
| 32.063  | J | [kgcm <sup>2</sup> ] | 1.632 | 28.274  | J | [kgcm <sup>2</sup> ] | 5.567  |
| 36.303  | J | [kgcm <sup>2</sup> ] | 1.183 | 31.858  | J | [kgcm <sup>2</sup> ] | 5.473  |
| 41.472  | J | [kgcm <sup>2</sup> ] | 2.110 | 36.063  | J | [kgcm <sup>2</sup> ] | 3.650  |
| 44.471  | J | [kgcm <sup>2</sup> ] | 0.900 | 40.906  | J | [kgcm <sup>2</sup> ] | 6.934  |
| 53.074  | J | [kgcm <sup>2</sup> ] | 1.523 | 44.178  | J | [kgcm <sup>2</sup> ] | 2.779  |
| 57.882  | J | [kgcm <sup>2</sup> ] | 0.578 | 50.345  | J | [kgcm <sup>2</sup> ] | 5.298  |
| 65.207  | J | [kgcm <sup>2</sup> ] | 0.570 | 57.501  | J | [kgcm <sup>2</sup> ] | 1.748  |
| 72.000  | J | [kgcm <sup>2</sup> ] | 0.422 | 64.790  | J | [kgcm <sup>2</sup> ] | 1.725  |
| 81.111  | J | [kgcm <sup>2</sup> ] | 0.416 | 70.474  | J | [kgcm <sup>2</sup> ] | 1.295  |
| 93.176  | J | [kgcm <sup>2</sup> ] | 0.257 | 79.407  | J | [kgcm <sup>2</sup> ] | 1.280  |
| 104.967 | J | [kgcm <sup>2</sup> ] | 0.254 | 92.563  | J | [kgcm <sup>2</sup> ] | 0.808  |
| 113.082 | J | [kgcm <sup>2</sup> ] | 0.189 | 104.296 | J | [kgcm <sup>2</sup> ] | 0.799  |
| 127.392 | J | [kgcm <sup>2</sup> ] | 0.186 | 112.338 | J | [kgcm <sup>2</sup> ] | 0.592  |
| 142.941 | J | [kgcm <sup>2</sup> ] | 0.122 | 126.578 | J | [kgcm <sup>2</sup> ] | 0.586  |
| 161.029 | J | [kgcm <sup>2</sup> ] | 0.121 | 140.548 | J | [kgcm <sup>2</sup> ] | 1.113  |
| 190.080 | J | [kgcm <sup>2</sup> ] | 0.227 | 158.364 | J | [kgcm <sup>2</sup> ] | 1.113  |
| 214.133 | J | [kgcm <sup>2</sup> ] | 0.226 | 184.600 | J | [kgcm <sup>2</sup> ] | 0.687  |
| 230.688 | J | [kgcm <sup>2</sup> ] | 0.168 | 208.000 | J | [kgcm <sup>2</sup> ] | 0.685  |
| 259.880 | J | [kgcm <sup>2</sup> ] | 0.167 | 224.037 | J | [kgcm <sup>2</sup> ] | 0.510  |
| 291.600 | J | [kgcm <sup>2</sup> ] | 0.109 | 252.436 | J | [kgcm <sup>2</sup> ] | 0.509  |
| 328.500 | J | [kgcm <sup>2</sup> ] | 0.109 | 283.193 | J | [kgcm <sup>2</sup> ] | 0.330  |
|         |   |                      |       | 319.091 | J | [kgcm <sup>2</sup> ] | 0.329  |

- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.



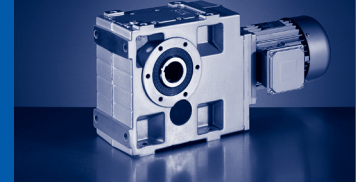
## GKS

### GKS [kgcm<sup>2</sup>] - moments of inertia

► Moment of inertia (J) depending on ratio i

| Gearbox |   |                      | GKS09  | Gearbox |   |                      | GKS11   |
|---------|---|----------------------|--------|---------|---|----------------------|---------|
| 12.283  | J | [kgcm <sup>2</sup> ] | 34.200 | 12.094  | J | [kgcm <sup>2</sup> ] | 104.000 |
| 13.360  | J | [kgcm <sup>2</sup> ] | 33.400 | 13.154  | J | [kgcm <sup>2</sup> ] | 101.000 |
| 16.122  | J | [kgcm <sup>2</sup> ] | 22.600 | 15.874  | J | [kgcm <sup>2</sup> ] | 68.000  |
| 17.536  | J | [kgcm <sup>2</sup> ] | 22.200 | 17.265  | J | [kgcm <sup>2</sup> ] | 66.500  |
| 19.541  | J | [kgcm <sup>2</sup> ] | 30.600 | 19.515  | J | [kgcm <sup>2</sup> ] | 90.300  |
| 22.022  | J | [kgcm <sup>2</sup> ] | 29.900 | 21.989  | J | [kgcm <sup>2</sup> ] | 90.400  |
| 25.649  | J | [kgcm <sup>2</sup> ] | 20.500 | 25.615  | J | [kgcm <sup>2</sup> ] | 61.200  |
| 29.228  | J | [kgcm <sup>2</sup> ] | 15.900 | 28.021  | J | [kgcm <sup>2</sup> ] | 52.200  |
| 32.940  | J | [kgcm <sup>2</sup> ] | 15.600 | 31.573  | J | [kgcm <sup>2</sup> ] | 51.300  |
| 35.193  | J | [kgcm <sup>2</sup> ] | 12.200 | 35.741  | J | [kgcm <sup>2</sup> ] | 36.800  |
| 39.662  | J | [kgcm <sup>2</sup> ] | 12.000 | 40.272  | J | [kgcm <sup>2</sup> ] | 36.200  |
| 43.146  | J | [kgcm <sup>2</sup> ] | 9.000  | 43.783  | J | [kgcm <sup>2</sup> ] | 27.900  |
| 48.625  | J | [kgcm <sup>2</sup> ] | 8.870  | 49.333  | J | [kgcm <sup>2</sup> ] | 27.500  |
| 58.456  | J | [kgcm <sup>2</sup> ] | 5.540  | 57.683  | J | [kgcm <sup>2</sup> ] | 17.700  |
| 65.879  | J | [kgcm <sup>2</sup> ] | 5.470  | 64.995  | J | [kgcm <sup>2</sup> ] | 17.500  |
| 70.982  | J | [kgcm <sup>2</sup> ] | 4.140  | 70.887  | J | [kgcm <sup>2</sup> ] | 13.000  |
| 79.996  | J | [kgcm <sup>2</sup> ] | 4.100  | 79.873  | J | [kgcm <sup>2</sup> ] | 12.900  |
| 91.860  | J | [kgcm <sup>2</sup> ] | 2.630  | 91.737  | J | [kgcm <sup>2</sup> ] | 8.300   |
| 103.524 | J | [kgcm <sup>2</sup> ] | 2.610  | 103.365 | J | [kgcm <sup>2</sup> ] | 8.210   |
| 111.484 | J | [kgcm <sup>2</sup> ] | 1.920  | 111.335 | J | [kgcm <sup>2</sup> ] | 6.050   |
| 125.641 | J | [kgcm <sup>2</sup> ] | 1.900  | 125.448 | J | [kgcm <sup>2</sup> ] | 5.990   |
| 140.921 | J | [kgcm <sup>2</sup> ] | 1.260  | 140.732 | J | [kgcm <sup>2</sup> ] | 3.960   |
| 158.816 | J | [kgcm <sup>2</sup> ] | 1.250  | 158.571 | J | [kgcm <sup>2</sup> ] | 3.930   |
| 182.000 | J | [kgcm <sup>2</sup> ] | 2.250  | 186.572 | J | [kgcm <sup>2</sup> ] | 7.070   |
| 205.111 | J | [kgcm <sup>2</sup> ] | 2.240  | 210.222 | J | [kgcm <sup>2</sup> ] | 7.050   |
| 220.882 | J | [kgcm <sup>2</sup> ] | 1.660  | 226.431 | J | [kgcm <sup>2</sup> ] | 5.210   |
| 248.930 | J | [kgcm <sup>2</sup> ] | 1.650  | 255.133 | J | [kgcm <sup>2</sup> ] | 5.200   |
| 279.205 | J | [kgcm <sup>2</sup> ] | 1.100  | 286.219 | J | [kgcm <sup>2</sup> ] | 3.440   |
| 314.659 | J | [kgcm <sup>2</sup> ] | 1.100  | 322.500 | J | [kgcm <sup>2</sup> ] | 3.430   |

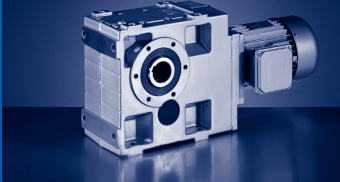
- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.



► Moment of inertia (J) depending on ratio i

| Gearbox |   |                      | GKS14   |
|---------|---|----------------------|---------|
| 12.435  | J | [kgcm <sup>2</sup> ] | 283.000 |
| 13.525  | J | [kgcm <sup>2</sup> ] | 275.000 |
| 16.646  | J | [kgcm <sup>2</sup> ] | 198.000 |
| 18.311  | J | [kgcm <sup>2</sup> ] | 173.000 |
| 20.065  | J | [kgcm <sup>2</sup> ] | 249.000 |
| 22.609  | J | [kgcm <sup>2</sup> ] | 243.000 |
| 24.696  | J | [kgcm <sup>2</sup> ] | 183.000 |
| 27.165  | J | [kgcm <sup>2</sup> ] | 159.000 |
| 30.609  | J | [kgcm <sup>2</sup> ] | 156.000 |
| 34.692  | J | [kgcm <sup>2</sup> ] | 111.000 |
| 39.089  | J | [kgcm <sup>2</sup> ] | 109.000 |
| 42.531  | J | [kgcm <sup>2</sup> ] | 82.400  |
| 47.923  | J | [kgcm <sup>2</sup> ] | 81.100  |
| 56.251  | J | [kgcm <sup>2</sup> ] | 54.200  |
| 63.382  | J | [kgcm <sup>2</sup> ] | 53.500  |
| 68.942  | J | [kgcm <sup>2</sup> ] | 38.900  |
| 77.681  | J | [kgcm <sup>2</sup> ] | 38.400  |
| 90.551  | J | [kgcm <sup>2</sup> ] | 25.100  |
| 102.029 | J | [kgcm <sup>2</sup> ] | 24.900  |
| 109.896 | J | [kgcm <sup>2</sup> ] | 18.300  |
| 123.826 | J | [kgcm <sup>2</sup> ] | 18.100  |
| 138.913 | J | [kgcm <sup>2</sup> ] | 12.000  |
| 156.522 | J | [kgcm <sup>2</sup> ] | 11.900  |
| 186.572 | J | [kgcm <sup>2</sup> ] | 21.600  |
| 210.222 | J | [kgcm <sup>2</sup> ] | 21.500  |
| 226.431 | J | [kgcm <sup>2</sup> ] | 15.900  |
| 255.133 | J | [kgcm <sup>2</sup> ] | 15.800  |
| 286.219 | J | [kgcm <sup>2</sup> ] | 10.500  |
| 322.500 | J | [kgcm <sup>2</sup> ] | 10.500  |

- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.



# GKS

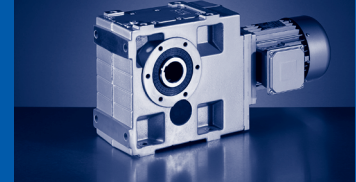
GKS [kgcm<sup>2</sup>] - moments of inertia

## GKS□□-4

► Moment of inertia (J) depending on ratio i

| Gearbox  |   |                      | GKS05 | Gearbox  |   |                      | GKS06 |
|----------|---|----------------------|-------|----------|---|----------------------|-------|
| 95.238   | J | [kgcm <sup>2</sup> ] | 0.143 | 103.721  | J | [kgcm <sup>2</sup> ] | 0.300 |
| 114.987  | J | [kgcm <sup>2</sup> ] | 0.196 | 113.205  | J | [kgcm <sup>2</sup> ] | 0.234 |
| 126.933  | J | [kgcm <sup>2</sup> ] | 0.196 | 127.059  | J | [kgcm <sup>2</sup> ] | 0.264 |
| 146.667  | J | [kgcm <sup>2</sup> ] | 0.142 | 140.816  | J | [kgcm <sup>2</sup> ] | 0.213 |
| 161.905  | J | [kgcm <sup>2</sup> ] | 0.141 | 155.647  | J | [kgcm <sup>2</sup> ] | 0.191 |
| 185.547  | J | [kgcm <sup>2</sup> ] | 0.195 | 174.336  | J | [kgcm <sup>2</sup> ] | 0.112 |
| 209.067  | J | [kgcm <sup>2</sup> ] | 0.195 | 202.588  | J | [kgcm <sup>2</sup> ] | 0.168 |
| 225.867  | J | [kgcm <sup>2</sup> ] | 0.073 | 224.524  | J | [kgcm <sup>2</sup> ] | 0.074 |
| 236.667  | J | [kgcm <sup>2</sup> ] | 0.141 | 252.000  | J | [kgcm <sup>2</sup> ] | 0.155 |
| 289.917  | J | [kgcm <sup>2</sup> ] | 0.108 | 279.286  | J | [kgcm <sup>2</sup> ] | 0.069 |
| 326.667  | J | [kgcm <sup>2</sup> ] | 0.108 | 316.800  | J | [kgcm <sup>2</sup> ] | 0.102 |
| 364.467  | J | [kgcm <sup>2</sup> ] | 0.073 | 361.429  | J | [kgcm <sup>2</sup> ] | 0.064 |
| 410.667  | J | [kgcm <sup>2</sup> ] | 0.073 | 408.000  | J | [kgcm <sup>2</sup> ] | 0.068 |
| 469.389  | J | [kgcm <sup>2</sup> ] | 0.050 | 458.067  | J | [kgcm <sup>2</sup> ] | 0.042 |
| 510.000  | J | [kgcm <sup>2</sup> ] | 0.023 | 517.091  | J | [kgcm <sup>2</sup> ] | 0.044 |
| 528.889  | J | [kgcm <sup>2</sup> ] | 0.050 | 555.927  | J | [kgcm <sup>2</sup> ] | 0.041 |
| 594.894  | J | [kgcm <sup>2</sup> ] | 0.033 | 640.800  | J | [kgcm <sup>2</sup> ] | 0.062 |
| 670.303  | J | [kgcm <sup>2</sup> ] | 0.033 | 696.668  | J | [kgcm <sup>2</sup> ] | 0.028 |
| 820.760  | J | [kgcm <sup>2</sup> ] | 0.050 | 812.137  | J | [kgcm <sup>2</sup> ] | 0.040 |
| 924.800  | J | [kgcm <sup>2</sup> ] | 0.050 | 914.907  | J | [kgcm <sup>2</sup> ] | 0.040 |
| 1040.215 | J | [kgcm <sup>2</sup> ] | 0.033 | 1017.741 | J | [kgcm <sup>2</sup> ] | 0.028 |
| 1172.073 | J | [kgcm <sup>2</sup> ] | 0.033 | 1146.529 | J | [kgcm <sup>2</sup> ] | 0.028 |
| 1303.560 | J | [kgcm <sup>2</sup> ] | 0.023 | 1340.834 | J | [kgcm <sup>2</sup> ] | 0.017 |
| 1468.800 | J | [kgcm <sup>2</sup> ] | 0.023 | 1510.507 | J | [kgcm <sup>2</sup> ] | 0.017 |
| 1717.389 | J | [kgcm <sup>2</sup> ] | 0.014 |          |   |                      |       |
| 1935.086 | J | [kgcm <sup>2</sup> ] | 0.014 |          |   |                      |       |

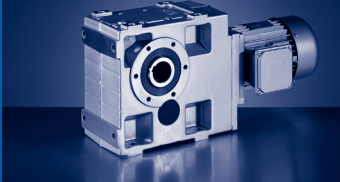
- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.



► Moment of inertia (J) depending on ratio i

| Gearbox  |   |                      | GKS07 | Gearbox  |   |                      | GKS09 |
|----------|---|----------------------|-------|----------|---|----------------------|-------|
| 103.039  | J | [kgcm <sup>2</sup> ] | 0.837 | 100.551  | J | [kgcm <sup>2</sup> ] | 2.480 |
| 112.391  | J | [kgcm <sup>2</sup> ] | 0.632 | 113.320  | J | [kgcm <sup>2</sup> ] | 2.456 |
| 126.222  | J | [kgcm <sup>2</sup> ] | 0.729 | 123.275  | J | [kgcm <sup>2</sup> ] | 2.107 |
| 137.748  | J | [kgcm <sup>2</sup> ] | 0.571 | 138.929  | J | [kgcm <sup>2</sup> ] | 2.091 |
| 154.622  | J | [kgcm <sup>2</sup> ] | 0.527 | 151.012  | J | [kgcm <sup>2</sup> ] | 1.516 |
| 179.201  | J | [kgcm <sup>2</sup> ] | 0.283 | 170.188  | J | [kgcm <sup>2</sup> ] | 1.505 |
| 201.254  | J | [kgcm <sup>2</sup> ] | 0.454 | 204.596  | J | [kgcm <sup>2</sup> ] | 1.244 |
| 222.909  | J | [kgcm <sup>2</sup> ] | 0.199 | 230.577  | J | [kgcm <sup>2</sup> ] | 1.239 |
| 246.659  | J | [kgcm <sup>2</sup> ] | 0.417 | 248.439  | J | [kgcm <sup>2</sup> ] | 1.128 |
| 273.199  | J | [kgcm <sup>2</sup> ] | 0.184 | 279.986  | J | [kgcm <sup>2</sup> ] | 1.125 |
| 321.049  | J | [kgcm <sup>2</sup> ] | 0.256 | 323.365  | J | [kgcm <sup>2</sup> ] | 0.713 |
| 358.829  | J | [kgcm <sup>2</sup> ] | 0.169 | 364.427  | J | [kgcm <sup>2</sup> ] | 0.710 |
| 399.353  | J | [kgcm <sup>2</sup> ] | 0.182 | 402.234  | J | [kgcm <sup>2</sup> ] | 0.509 |
| 464.367  | J | [kgcm <sup>2</sup> ] | 0.106 | 453.311  | J | [kgcm <sup>2</sup> ] | 0.507 |
| 516.810  | J | [kgcm <sup>2</sup> ] | 0.113 | 520.538  | J | [kgcm <sup>2</sup> ] | 0.466 |
| 563.572  | J | [kgcm <sup>2</sup> ] | 0.101 | 586.638  | J | [kgcm <sup>2</sup> ] | 0.465 |
| 636.581  | J | [kgcm <sup>2</sup> ] | 0.161 | 631.744  | J | [kgcm <sup>2</sup> ] | 0.443 |
| 683.972  | J | [kgcm <sup>2</sup> ] | 0.074 | 711.965  | J | [kgcm <sup>2</sup> ] | 0.443 |
| 823.810  | J | [kgcm <sup>2</sup> ] | 0.101 | 817.551  | J | [kgcm <sup>2</sup> ] | 0.276 |
| 928.237  | J | [kgcm <sup>2</sup> ] | 0.101 | 921.367  | J | [kgcm <sup>2</sup> ] | 0.276 |
| 999.806  | J | [kgcm <sup>2</sup> ] | 0.073 | 992.209  | J | [kgcm <sup>2</sup> ] | 0.201 |
| 1126.542 | J | [kgcm <sup>2</sup> ] | 0.073 | 1118.204 | J | [kgcm <sup>2</sup> ] | 0.201 |
| 1277.842 | J | [kgcm <sup>2</sup> ] | 0.047 | 1254.197 | J | [kgcm <sup>2</sup> ] | 0.130 |
| 1439.822 | J | [kgcm <sup>2</sup> ] | 0.047 | 1413.461 | J | [kgcm <sup>2</sup> ] | 0.130 |

- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.



## GKS

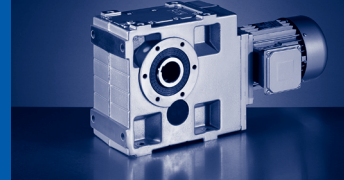
### GKS [kgcm<sup>2</sup>] - moments of inertia

► Moment of inertia (J) depending on ratio i

|          |   |                      | GKS11 |          |   |                      | GKS14  |
|----------|---|----------------------|-------|----------|---|----------------------|--------|
| 102.119  | J | [kgcm <sup>2</sup> ] | 7.276 | 97.467   | J | [kgcm <sup>2</sup> ] | 23.471 |
| 115.063  | J | [kgcm <sup>2</sup> ] | 7.205 | 109.822  | J | [kgcm <sup>2</sup> ] | 23.232 |
| 125.095  | J | [kgcm <sup>2</sup> ] | 6.233 | 119.493  | J | [kgcm <sup>2</sup> ] | 19.936 |
| 140.952  | J | [kgcm <sup>2</sup> ] | 6.186 | 134.640  | J | [kgcm <sup>2</sup> ] | 19.777 |
| 153.242  | J | [kgcm <sup>2</sup> ] | 4.500 | 158.039  | J | [kgcm <sup>2</sup> ] | 16.438 |
| 172.667  | J | [kgcm <sup>2</sup> ] | 4.469 | 178.072  | J | [kgcm <sup>2</sup> ] | 16.348 |
| 201.890  | J | [kgcm <sup>2</sup> ] | 3.735 | 193.754  | J | [kgcm <sup>2</sup> ] | 12.076 |
| 227.481  | J | [kgcm <sup>2</sup> ] | 3.717 | 218.315  | J | [kgcm <sup>2</sup> ] | 12.016 |
| 248.106  | J | [kgcm <sup>2</sup> ] | 3.355 | 237.467  | J | [kgcm <sup>2</sup> ] | 10.871 |
| 279.556  | J | [kgcm <sup>2</sup> ] | 3.343 | 267.568  | J | [kgcm <sup>2</sup> ] | 10.830 |
| 322.931  | J | [kgcm <sup>2</sup> ] | 2.088 | 321.729  | J | [kgcm <sup>2</sup> ] | 6.420  |
| 363.866  | J | [kgcm <sup>2</sup> ] | 2.081 | 362.512  | J | [kgcm <sup>2</sup> ] | 6.398  |
| 395.787  | J | [kgcm <sup>2</sup> ] | 1.521 | 390.671  | J | [kgcm <sup>2</sup> ] | 4.749  |
| 445.958  | J | [kgcm <sup>2</sup> ] | 1.517 | 440.193  | J | [kgcm <sup>2</sup> ] | 4.734  |
| 512.196  | J | [kgcm <sup>2</sup> ] | 1.385 | 513.121  | J | [kgcm <sup>2</sup> ] | 4.330  |
| 577.122  | J | [kgcm <sup>2</sup> ] | 1.382 | 578.164  | J | [kgcm <sup>2</sup> ] | 4.322  |
| 621.619  | J | [kgcm <sup>2</sup> ] | 1.314 | 622.742  | J | [kgcm <sup>2</sup> ] | 4.122  |
| 700.416  | J | [kgcm <sup>2</sup> ] | 1.312 | 701.681  | J | [kgcm <sup>2</sup> ] | 4.116  |
| 816.455  | J | [kgcm <sup>2</sup> ] | 0.819 | 805.901  | J | [kgcm <sup>2</sup> ] | 2.620  |
| 919.949  | J | [kgcm <sup>2</sup> ] | 0.818 | 908.058  | J | [kgcm <sup>2</sup> ] | 2.617  |
| 990.879  | J | [kgcm <sup>2</sup> ] | 0.600 | 978.071  | J | [kgcm <sup>2</sup> ] | 1.912  |
| 1116.484 | J | [kgcm <sup>2</sup> ] | 0.599 | 1102.052 | J | [kgcm <sup>2</sup> ] | 1.909  |
| 1252.516 | J | [kgcm <sup>2</sup> ] | 0.386 | 1236.326 | J | [kgcm <sup>2</sup> ] | 1.259  |
| 1411.286 | J | [kgcm <sup>2</sup> ] | 0.385 | 1393.043 | J | [kgcm <sup>2</sup> ] | 1.258  |

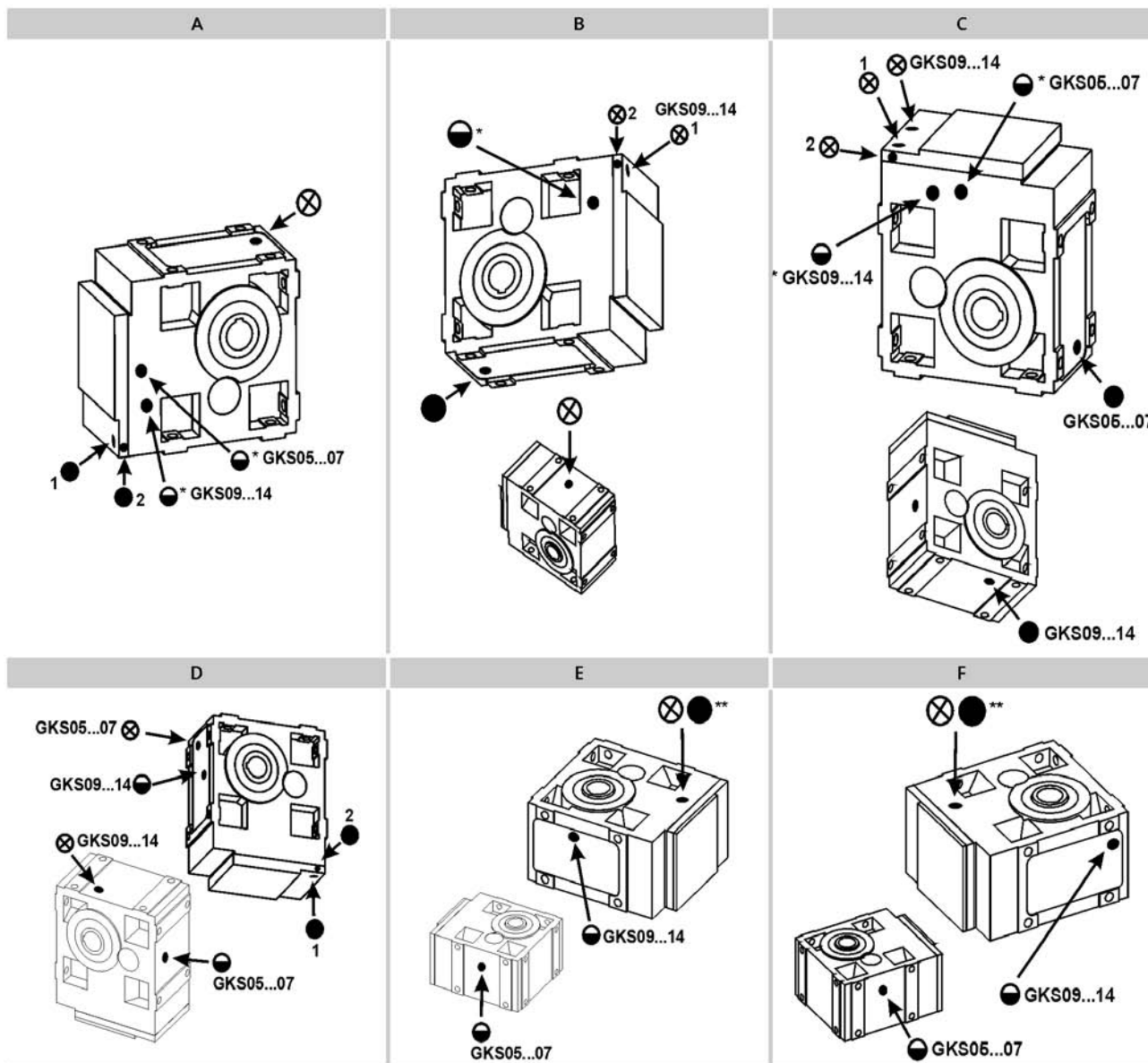
- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.





## Position of ventilation, sealing elements and oil level check

GKS05...14-3



A ... F Mounting position

⊗ Ventilation / Oil filler plug

● Oil drain plug

○ Oil control plug

\* On both sides

\*\* On opposite side

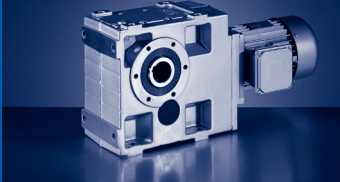
Pos.1 standard

Pos.2 only with:

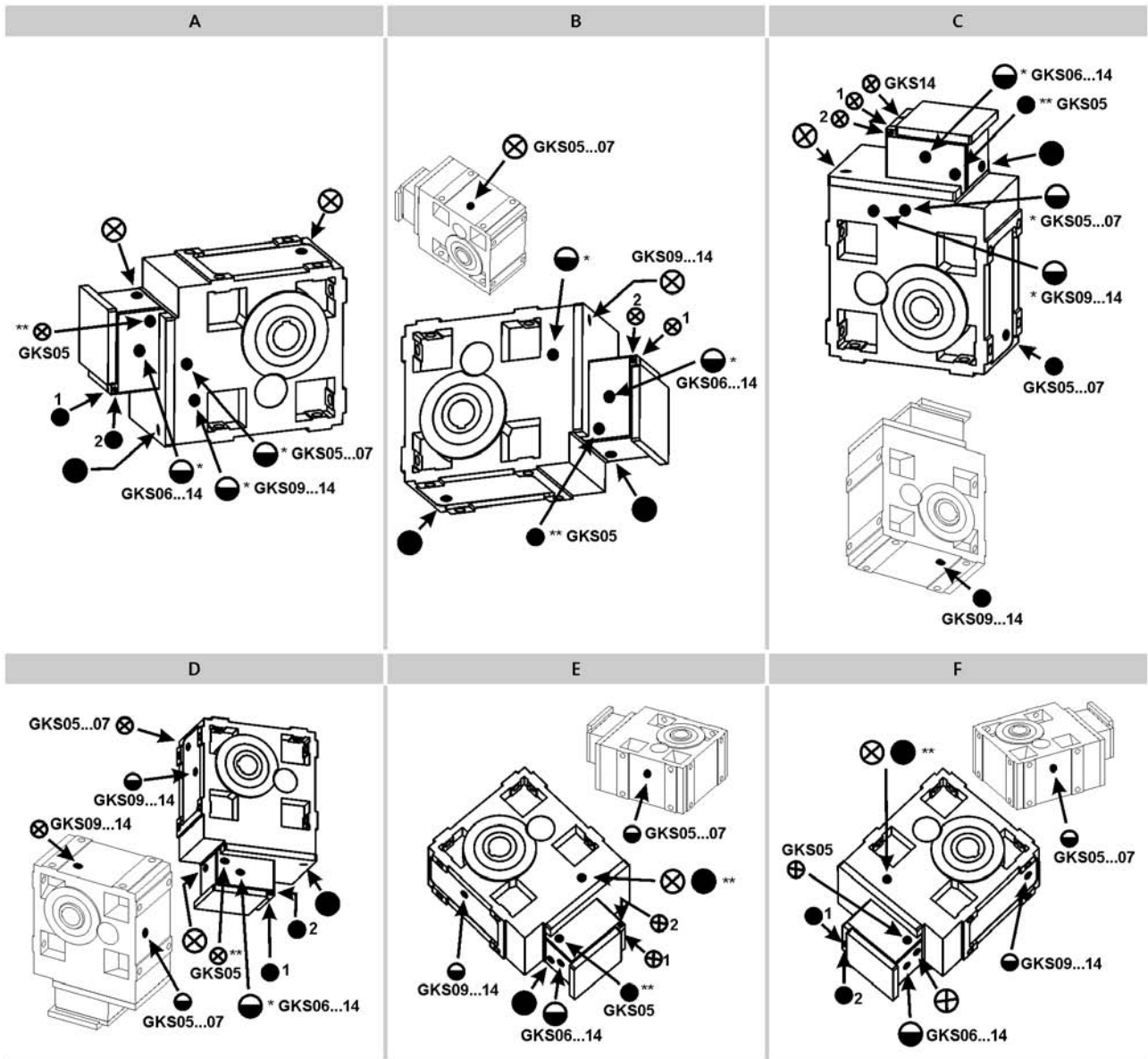
▶ GKS05-3M □□□ 090C□□

▶ GKS05-3M □□□ 100C□□

▶ GKS06-3M □□□ 112C□□



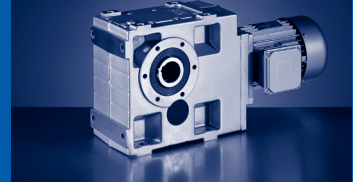
GKS05...14-4



- A ... F Mounting position  
 ⊗ Ventilation / Oil filler plug  
 ● Oil drain plug  
 ⊖ Oil control plug  
 \* On both sides  
 \*\* On opposite side

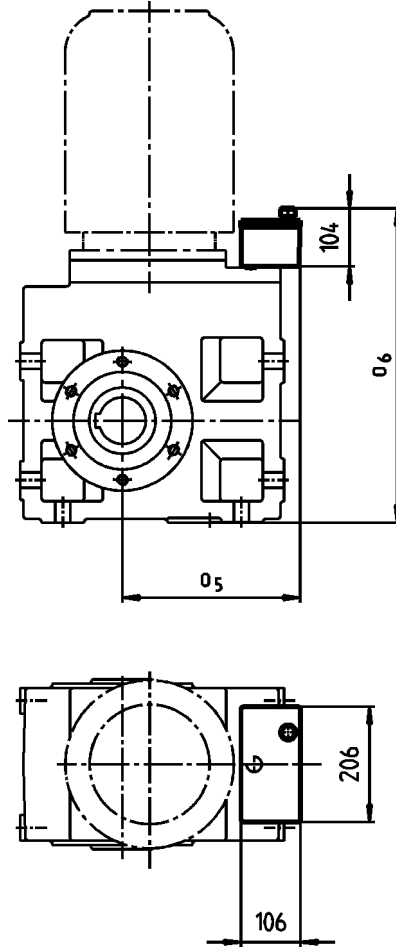
- Item 1 standard  
 Item 2 only with:  
 ▶ GKS07-4M □□□ 090C□□  
 ▶ GKS07-4M □□□ 100C□□  
 ▶ GKS09-4M □□□ 112C□□

6



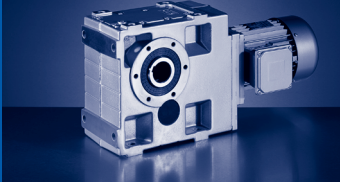
## Compensation reservoir for mounting position C

GKS□□-3



| Motor | 090<br>100             |                        | 112                    |                        | 132                    |                        |                        |                        |
|-------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|       | o <sub>5</sub><br>[mm] | o <sub>6</sub><br>[mm] | o <sub>5</sub><br>[mm] | o <sub>6</sub><br>[mm] | o <sub>5</sub><br>[mm] | o <sub>6</sub><br>[mm] | o <sub>5</sub><br>[mm] | o <sub>6</sub><br>[mm] |
| GKS09 | 243                    | 533                    | 265                    | 533                    | 282                    | 533                    | 282                    | 533                    |
| GKS11 | 258                    | 626                    | 280                    | 630                    | 304                    | 630                    | 304                    | 630                    |
| GKS14 |                        |                        | 313                    | 739                    | 343                    | 739                    | 343                    | 739                    |

► Terminal box position 4 not permitted.



### GKS□□-3M HAR / HBR

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|--------|------------------|------------------|------------------|--------|
| GKS04 | m [kg] | 16               | 18               | 23               |        |
| GKS05 | m [kg] | 26               | 28               | 33               | 41     |
| GKS06 | m [kg] | 40               | 42               | 47               | 55     |
| GKS07 | m [kg] |                  |                  | 73               | 81     |
| GKS09 | m [kg] |                  |                  |                  | 129    |

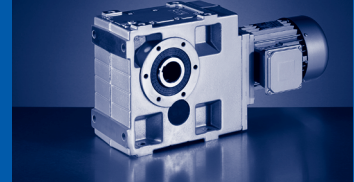
|       |        | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|--------|------------------|--------|------------------|--------|
| GKS06 | m [kg] | 64               |        |                  |        |
| GKS07 | m [kg] | 89               | 102    | 132              |        |
| GKS09 | m [kg] | 138              | 150    |                  | 181    |
| GKS11 | m [kg] | 237              | 249    |                  | 279    |
| GKS14 | m [kg] |                  | 420    |                  | 447    |

### GKS□□-3M HAK

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|--------|------------------|------------------|------------------|--------|
| GKS04 | m [kg] | 19               | 21               | 26               |        |
| GKS05 | m [kg] | 30               | 32               | 37               | 45     |
| GKS06 | m [kg] | 47               | 49               | 54               | 62     |
| GKS07 | m [kg] |                  |                  | 84               | 92     |
| GKS09 | m [kg] |                  |                  |                  | 145    |

|       |        | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|--------|------------------|--------|------------------|--------|
| GKS06 | m [kg] | 71               |        |                  |        |
| GKS07 | m [kg] | 100              | 113    | 143              |        |
| GKS09 | m [kg] | 154              | 166    |                  | 197    |
| GKS11 | m [kg] | 261              | 273    |                  | 303    |
| GKS14 | m [kg] |                  | 453    |                  | 480    |

- Weights with oil filling for mounting position A; all values are approximate.  
The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



### GKS□□-3M VAR / VBR

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|---|------|------------------|------------------|------------------|--------|
| GKS04 | m | [kg] | 17               | 19               | 24               |        |
| GKS05 | m | [kg] | 27               | 29               | 34               | 42     |
| GKS06 | m | [kg] | 43               | 45               | 49               | 58     |
| GKS07 | m | [kg] |                  |                  | 78               | 86     |
| GKS09 | m | [kg] |                  |                  |                  | 137    |

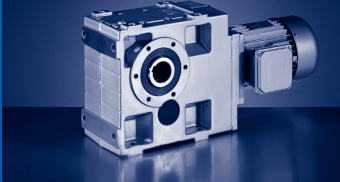
|       |   |      | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|---|------|------------------|--------|------------------|--------|
| GKS06 | m | [kg] | 66               |        |                  |        |
| GKS07 | m | [kg] | 94               | 107    | 137              |        |
| GKS09 | m | [kg] | 146              | 158    |                  | 189    |
| GKS11 | m | [kg] | 253              | 265    |                  | 295    |
| GKS14 | m | [kg] |                  | 453    |                  | 480    |

### GKS□□-3M VAK

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|---|------|------------------|------------------|------------------|--------|
| GKS04 | m | [kg] | 19               | 21               | 26               |        |
| GKS05 | m | [kg] | 31               | 33               | 38               | 46     |
| GKS06 | m | [kg] | 50               | 52               | 56               | 65     |
| GKS07 | m | [kg] |                  |                  | 89               | 97     |
| GKS09 | m | [kg] |                  |                  |                  | 153    |

|       |   |      | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|---|------|------------------|--------|------------------|--------|
| GKS06 | m | [kg] | 73               |        |                  |        |
| GKS07 | m | [kg] | 105              | 118    | 148              |        |
| GKS09 | m | [kg] | 162              | 174    |                  | 205    |
| GKS11 | m | [kg] | 277              | 289    |                  | 319    |
| GKS14 | m | [kg] |                  | 486    |                  | 513    |

- Weights with oil filling for mounting position A; all values are approximate.  
The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



### GKS□□-3M SAR / SBR

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|--------|------------------|------------------|------------------|--------|
| GKS04 | m [kg] | 17               | 19               | 24               |        |
| GKS05 | m [kg] | 27               | 29               | 34               | 42     |
| GKS06 | m [kg] | 41               | 43               | 48               | 56     |
| GKS07 | m [kg] |                  |                  | 74               | 82     |
| GKS09 | m [kg] |                  |                  |                  | 132    |

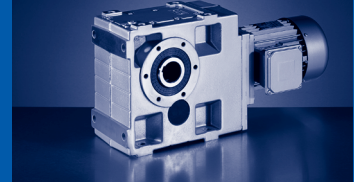
|       |        | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|--------|------------------|--------|------------------|--------|
| GKS06 | m [kg] | 65               |        |                  |        |
| GKS07 | m [kg] | 91               | 104    | 133              |        |
| GKS09 | m [kg] | 141              | 153    |                  | 184    |
| GKS11 | m [kg] | 242              | 254    |                  | 284    |
| GKS14 | m [kg] |                  | 431    |                  | 458    |

### GKS□□-3M SAK

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 |
|-------|--------|------------------|------------------|------------------|--------|
| GKS04 | m [kg] | 19               | 21               | 26               |        |
| GKS05 | m [kg] | 31               | 33               | 38               | 46     |
| GKS06 | m [kg] | 48               | 50               | 55               | 63     |
| GKS07 | m [kg] |                  |                  | 85               | 93     |
| GKS09 | m [kg] |                  |                  |                  | 148    |

|       |        | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|--------|------------------|--------|------------------|--------|
| GKS06 | m [kg] | 72               |        |                  |        |
| GKS07 | m [kg] | 102              | 115    | 144              |        |
| GKS09 | m [kg] | 157              | 169    |                  | 200    |
| GKS11 | m [kg] | 266              | 278    |                  | 308    |
| GKS14 | m [kg] |                  | 464    |                  | 491    |

- Weights with oil filling for mounting position A; all values are approximate.  
The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



## GKS□□-4M HAR / HBR

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 |
|-------|--------|------------------|------------------|--------|--------|
| GKS05 | m [kg] | 27               |                  |        |        |
| GKS06 | m [kg] | 44               | 46               | 51     |        |
| GKS07 | m [kg] | 74               | 76               |        | 81     |
| GKS09 | m [kg] | 127              | 129              |        | 134    |
| GKS11 | m [kg] |                  |                  |        | 242    |

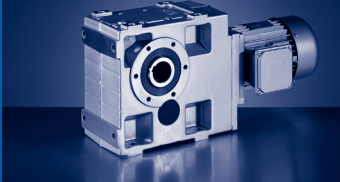
|       |        | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|--------|--------|------------------|--------|------------------|--------|
| GKS07 | m [kg] | 89     |                  |        |                  |        |
| GKS09 | m [kg] | 142    | 151              | 164    |                  |        |
| GKS11 | m [kg] | 250    | 258              | 271    | 301              |        |
| GKS14 | m [kg] | 435    | 444              | 456    |                  | 487    |

## GKS□□-4M HAK

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 |
|-------|--------|------------------|------------------|--------|--------|
| GKS05 | m [kg] | 31               |                  |        |        |
| GKS06 | m [kg] | 51               | 53               | 58     |        |
| GKS07 | m [kg] | 85               | 87               |        | 92     |
| GKS09 | m [kg] | 143              | 145              |        | 150    |
| GKS11 | m [kg] |                  |                  |        | 266    |

|       |        | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|--------|--------|------------------|--------|------------------|--------|
| GKS07 | m [kg] | 100    |                  |        |                  |        |
| GKS09 | m [kg] | 158    | 167              | 180    |                  |        |
| GKS11 | m [kg] | 274    | 282              | 295    | 325              |        |
| GKS14 | m [kg] | 468    | 477              | 489    |                  | 520    |

- Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



### GKS□□-4M VAR / VBR

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 |
|-------|--------|------------------|------------------|--------|--------|
| GKS05 | m [kg] | 28               |                  |        |        |
| GKS06 | m [kg] | 46               | 48               | 53     |        |
| GKS07 | m [kg] | 79               | 81               |        | 86     |
| GKS09 | m [kg] | 135              | 137              |        | 142    |
| GKS11 | m [kg] |                  |                  |        | 258    |

|       |        | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|--------|--------|------------------|--------|------------------|--------|
| GKS07 | m [kg] | 94     |                  |        |                  |        |
| GKS09 | m [kg] | 150    | 159              | 172    |                  |        |
| GKS11 | m [kg] | 266    | 274              | 287    | 317              |        |
| GKS14 | m [kg] | 468    | 477              | 489    |                  | 520    |

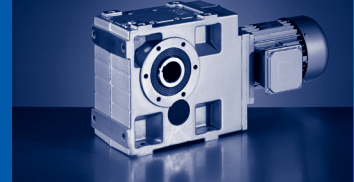
### GKS□□-4M VAK

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 |
|-------|--------|------------------|------------------|--------|--------|
| GKS05 | m [kg] | 32               |                  |        |        |
| GKS06 | m [kg] | 53               | 55               | 60     |        |
| GKS07 | m [kg] | 90               | 92               |        | 97     |
| GKS09 | m [kg] | 151              | 153              |        | 158    |
| GKS11 | m [kg] |                  |                  |        | 282    |

|       |        | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|--------|--------|------------------|--------|------------------|--------|
| GKS07 | m [kg] | 105    |                  |        |                  |        |
| GKS09 | m [kg] | 166    | 175              | 188    |                  |        |
| GKS11 | m [kg] | 290    | 298              | 311    | 341              |        |
| GKS14 | m [kg] | 501    | 510              | 522    |                  | 553    |

- Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).





### GKS□□-4M SAR / SBR

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 |
|-------|---|------|------------------|------------------|--------|--------|
| GKS05 | m | [kg] | 28               |                  |        |        |
| GKS06 | m | [kg] | 45               | 47               | 52     |        |
| GKS07 | m | [kg] | 75               | 78               |        | 82     |
| GKS09 | m | [kg] | 130              | 132              |        | 137    |
| GKS11 | m | [kg] |                  |                  |        | 247    |

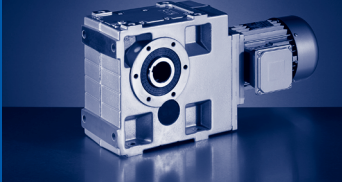
|       |   |      | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|---|------|--------|------------------|--------|------------------|--------|
| GKS07 | m | [kg] | 90     |                  |        |                  |        |
| GKS09 | m | [kg] | 145    | 154              | 167    |                  |        |
| GKS11 | m | [kg] | 255    | 263              | 276    | 306              |        |
| GKS14 | m | [kg] | 446    | 455              | 467    |                  | 498    |

### GKS□□-4M SAK

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 |
|-------|---|------|------------------|------------------|--------|--------|
| GKS05 | m | [kg] | 32               |                  |        |        |
| GKS06 | m | [kg] | 52               | 54               | 59     |        |
| GKS07 | m | [kg] | 86               | 89               |        | 93     |
| GKS09 | m | [kg] | 146              | 148              |        | 153    |
| GKS11 | m | [kg] |                  |                  |        | 271    |

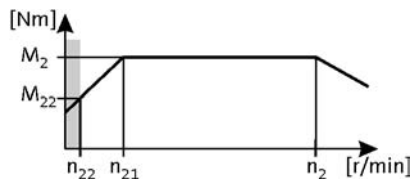
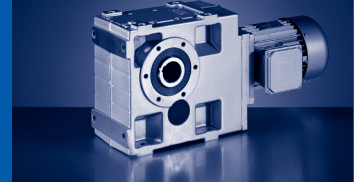
|       |   |      | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|-------|---|------|--------|------------------|--------|------------------|--------|
| GKS07 | m | [kg] | 101    |                  |        |                  |        |
| GKS09 | m | [kg] | 161    | 170              | 183    |                  |        |
| GKS11 | m | [kg] | 279    | 287              | 300    | 330              |        |
| GKS14 | m | [kg] | 479    | 488              | 500    |                  | 531    |

- Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



**GKS**  
GKS [kg] - MF□MA

6

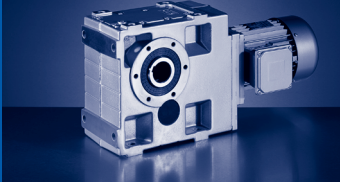


120 Hz:  $P_N = 0.55 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.3 \dots 3440 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i       |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|---------|-------------------|-----------------|-----|
| 16                  | 67                  | - | 383              | 9.9              | 13            | 4.5 | 8.991   | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 15                  | 61                  | - | 350              | 11               | 14            | 4.5 | 9.836   | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 11                  | 46                  | - | 261              | 15               | 19            | 3.9 | 13.176  | GKS05-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 10                  | 42                  | - | 240              | 16               | 21            | 4.5 | 14.333  | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 7.0                 | 29                  | - | 167              | 23               | 30            | 4.5 | 20.588  | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 6.4                 | 27                  | - | 153              | 25               | 33            | 4.2 | 22.522  | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 5.7                 | 24                  | - | 137              | 28               | 36            | 3.5 | 25.088  | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 5.0                 | 21                  | - | 120              | 32               | 42            | 3.3 | 28.727  | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 4.5                 | 19                  | - | 108              | 35               | 46            | 2.7 | 32.000  | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 4.1                 | 17                  | - | 98               | 39               | 51            | 2.7 | 35.191  | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 3.7                 | 15                  | - | 88               | 43               | 57            | 2.2 | 39.200  | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 3.2                 | 14                  | - | 78               | 49               | 64            | 2.5 | 44.240  | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 2.8                 | 12                  | - | 68               | 56               | 74            | 2.1 | 50.943  | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 2.5                 | 11                  | - | 60               | 63               | 83            | 2.0 | 56.976  | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 2.2                 | 9.2                 | - | 53               | 71               | 94            | 1.7 | 64.978  | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 2.2                 | 9.0                 | - | 52               | 73               | 97            | 3.0 | 66.592  | GKS05-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 2.0                 | 8.3                 | - | 48               | 79               | 105           | 1.6 | 72.210  | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 1.9                 | 8.0                 | - | 46               | 82               | 109           | 2.5 | 75.033  | GKS05-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 1.8                 | 7.5                 | - | 43               | 87               | 115           | 1.4 | 79.598  | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 1.7                 | 7.2                 | - | 42               | 91               | 120           | 2.4 | 82.833  | GKS05-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 1.6                 | 6.6                 | - | 38               | 99               | 131           | 1.2 | 90.491  | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 1.5                 | 6.4                 | - | 37               | 102              | 135           | 2.0 | 93.333  | GKS05-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 1.5                 | 6.3                 | - | 36               | 103              | 136           | 1.1 | 95.238  | GKS05-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 1.4                 | 6.0                 | - | 34               | 110              | 145           | 1.1 | 100.067 | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 1.3                 | 5.6                 | - | 32               | 118              | 156           | 1.8 | 107.196 | GKS05-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 1.3                 | 5.4                 | - | 31               | 122              | 162           | 1.0 | 111.467 | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 1.3                 | 5.2                 | - | 30               | 124              | 164           | 1.5 | 114.987 | GKS05-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 1.3                 | 5.3                 | - | 30               | 122              | 161           | 3.2 | 113.205 | GKS06-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 1.2                 | 5.0                 | - | 29               | 133              | 175           | 1.7 | 120.784 | GKS05-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 1.1                 | 4.7                 | - | 27               | 142              | 187           | 1.0 | 128.874 | GKS04-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 1.1                 | 4.7                 | - | 27               | 137              | 181           | 1.5 | 126.933 | GKS05-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 1.1                 | 4.6                 | - | 26               | 143              | 189           | 1.7 | 130.097 | GKS05-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 1.0                 | 4.1                 | - | 24               | 158              | 209           | 1.2 | 146.667 | GKS05-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 1.0                 | 4.1                 | - | 24               | 161              | 213           | 1.4 | 146.588 | GKS05-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 1.0                 | 4.3                 | - | 24               | 152              | 201           | 2.6 | 140.816 | GKS06-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 1.0                 | 4.2                 | - | 24               | 157              | 207           | 2.8 | 142.941 | GKS06-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 0.9                 | 3.9                 | - | 22               | 168              | 222           | 3.0 | 155.647 | GKS06-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.9                 | 3.7                 | - | 21               | 175              | 231           | 1.2 | 161.905 | GKS05-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.9                 | 3.6                 | - | 21               | 183              | 241           | 1.3 | 166.276 | GKS05-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 0.9                 | 3.7                 | - | 21               | 177              | 234           | 2.6 | 161.029 | GKS06-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 0.8                 | 3.4                 | - | 20               | 188              | 249           | 2.1 | 174.336 | GKS06-4M□□□063C32 | E84AV□□□5514□□□ | 300 |



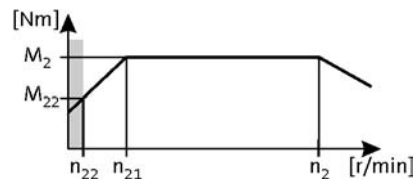
# GKS

## GKS [Nm] - MF□MA

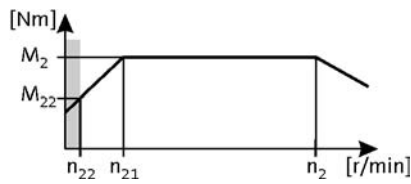
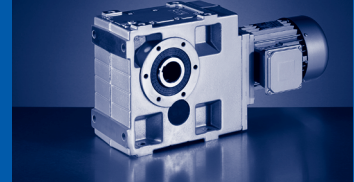
120 Hz:  $P_N = 0.55 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.3 \dots 3440 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$      |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|----------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |          |                   |                 |     |
| 0.8      | 3.2      | - | 19      | 200      | 265   | 1.2 | 185.547  | GKS05-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.8      | 3.2      | - | 18      | 206      | 272   | 1.1 | 187.353  | GKS05-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 0.8      | 3.2      | - | 18      | 209      | 276   | 2.4 | 190.080  | GKS06-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 0.7      | 2.9      | - | 17      | 226      | 298   | 1.0 | 209.067  | GKS05-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.7      | 3.0      | - | 17      | 219      | 289   | 2.3 | 202.588  | GKS06-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.7      | 2.8      | - | 16      | 232      | 306   | 1.0 | 211.200  | GKS05-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 0.7      | 2.8      | - | 16      | 235      | 311   | 2.0 | 214.133  | GKS06-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 0.6      | 2.5      | - | 15      | 255      | 337   | 0.9 | 236.667  | GKS05-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.6      | 2.7      | - | 15      | 242      | 320   | 1.6 | 224.524  | GKS06-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.6      | 2.6      | - | 15      | 253      | 335   | 2.0 | 230.688  | GKS06-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 0.6      | 2.7      | - | 15      | 241      | 318   | 3.2 | 222.909  | GKS07-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.6      | 2.4      | - | 14      | 272      | 359   | 1.9 | 252.000  | GKS06-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.6      | 2.3      | - | 13      | 285      | 377   | 1.6 | 259.880  | GKS06-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 0.5      | 2.2      | - | 13      | 295      | 390   | 2.6 | 273.199  | GKS07-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.5      | 2.2      | - | 12      | 301      | 398   | 1.3 | 279.286  | GKS06-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.5      | 2.1      | - | 12      | 320      | 423   | 1.6 | 291.600  | GKS06-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 0.4      | 1.8      | - | 11      | 361      | 476   | 1.3 | 328.500  | GKS06-3M□□□063C32 | E84AV□□□5514□□□ | 292 |
| 0.5      | 1.9      | - | 11      | 342      | 452   | 1.5 | 316.800  | GKS06-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.5      | 1.9      | - | 11      | 346      | 458   | 2.8 | 321.049  | GKS07-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.4      | 1.7      | - | 9.6     | 387      | 512   | 2.0 | 358.829  | GKS07-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.4      | 1.7      | - | 9.5     | 390      | 515   | 1.0 | 361.429  | GKS06-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.4      | 1.5      | - | 8.6     | 431      | 569   | 2.2 | 399.353  | GKS07-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.4      | 1.5      | - | 8.4     | 440      | 582   | 1.2 | 408.000  | GKS06-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.3      | 1.3      | - | 7.4     | 501      | 662   | 1.5 | 464.367  | GKS07-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.3      | 1.2      | - | 6.7     | 558      | 737   | 0.9 | 517.091  | GKS06-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.3      | 1.2      | - | 6.7     | 558      | 737   | 1.7 | 516.810  | GKS07-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.3      | 1.1      | - | 6.1     | 608      | 803   | 1.3 | 563.572  | GKS07-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.2      | 0.9      | - | 5.4     | 687      | 908   | 1.4 | 636.581  | GKS07-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.2      | 0.9      | - | 5.0     | 738      | 975   | 1.0 | 683.972  | GKS07-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.2      | 0.7      | - | 4.2     | 889      | 1174  | 1.1 | 823.810  | GKS07-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.2      | 0.7      | - | 4.2     | 882      | 1166  | 2.5 | 817.551  | GKS09-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.2      | 0.7      | - | 3.7     | 994      | 1314  | 2.2 | 921.367  | GKS09-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.1      | 0.6      | - | 3.5     | 1071     | 1415  | 2.0 | 992.209  | GKS09-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.1      | 0.5      | - | 3.1     | 1207     | 1594  | 1.8 | 1118.204 | GKS09-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.1      | 0.5      | - | 2.7     | 1353     | 1788  | 1.6 | 1254.197 | GKS09-4M□□□063C32 | E84AV□□□5514□□□ | 300 |
| 0.1      | 0.4      | - | 2.4     | 1525     | 2015  | 1.5 | 1413.461 | GKS09-4M□□□063C32 | E84AV□□□5514□□□ | 300 |

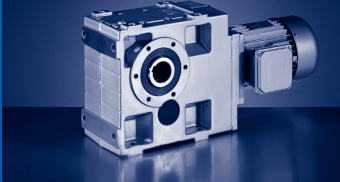


120 Hz:  $P_N = 0.75 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 141.7 \dots 3400 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i   |         |                   |                 |     |
|---------------------|---------------------|------------------|------------------|---------------|-----|-----|---------|-------------------|-----------------|-----|
| 16                  | 67                  | -                | 378              | 14            | 18  | 3.3 | 8.991   | GKS04-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 14                  | 61                  | -                | 346              | 15            | 20  | 3.3 | 9.836   | GKS04-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 11                  | 46                  | -                | 258              | 20            | 26  | 2.9 | 13.176  | GKS05-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 9.9                 | 42                  | -                | 237              | 22            | 29  | 3.3 | 14.333  | GKS04-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 6.9                 | 29                  | -                | 165              | 31            | 41  | 3.3 | 20.588  | GKS04-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 6.3                 | 27                  | -                | 151              | 34            | 45  | 3.1 | 22.522  | GKS04-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 5.7                 | 24                  | -                | 136              | 38            | 50  | 2.5 | 25.088  | GKS04-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 4.9                 | 21                  | -                | 118              | 43            | 58  | 2.4 | 28.727  | GKS04-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 4.4                 | 19                  | -                | 106              | 48            | 64  | 2.0 | 32.000  | GKS04-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 4.3                 | 18                  | -                | 104              | 49            | 66  | 2.9 | 32.744  | GKS05-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 4.0                 | 17                  | -                | 97               | 53            | 70  | 2.0 | 35.191  | GKS04-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 3.8                 | 16                  | -                | 92               | 55            | 74  | 2.9 | 36.894  | GKS05-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 3.6                 | 15                  | -                | 87               | 59            | 78  | 1.6 | 39.200  | GKS04-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 3.4                 | 14                  | -                | 81               | 63            | 84  | 3.0 | 41.765  | GKS05-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 3.2                 | 14                  | -                | 77               | 66            | 89  | 1.8 | 44.240  | GKS04-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 3.0                 | 13                  | -                | 72               | 70            | 94  | 2.8 | 47.059  | GKS05-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 2.8                 | 12                  | -                | 67               | 76            | 102 | 1.5 | 50.943  | GKS04-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 2.5                 | 11                  | -                | 60               | 85            | 114 | 1.4 | 56.976  | GKS04-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 2.2                 | 9.2                 | -                | 52               | 97            | 130 | 1.2 | 64.978  | GKS04-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 2.1                 | 9.0                 | -                | 51               | 100           | 133 | 2.1 | 66.592  | GKS05-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 2.0                 | 8.3                 | -                | 47               | 108           | 145 | 1.1 | 72.210  | GKS04-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 1.9                 | 8.0                 | -                | 45               | 112           | 150 | 1.8 | 75.033  | GKS05-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 1.8                 | 7.5                 | -                | 43               | 119           | 159 | 1.0 | 79.598  | GKS04-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 1.7                 | 7.2                 | -                | 41               | 124           | 166 | 1.7 | 82.833  | GKS05-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 1.5                 | 6.4                 | -                | 37               | 140           | 186 | 2.6 | 93.176  | GKS06-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 1.5                 | 6.4                 | -                | 36               | 140           | 187 | 1.5 | 93.333  | GKS05-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 1.4                 | 5.8                 | -                | 33               | 153           | 204 | 2.9 | 103.721 | GKS06-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 1.3                 | 5.6                 | -                | 32               | 160           | 215 | 1.3 | 107.196 | GKS05-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 1.4                 | 5.7                 | -                | 32               | 157           | 210 | 2.6 | 104.967 | GKS06-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 1.2                 | 5.2                 | -                | 30               | 169           | 226 | 1.1 | 114.987 | GKS05-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 1.3                 | 5.3                 | -                | 30               | 167           | 223 | 2.3 | 113.205 | GKS06-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 1.3                 | 5.3                 | -                | 30               | 169           | 226 | 2.5 | 113.082 | GKS06-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 1.2                 | 5.0                 | -                | 28               | 181           | 242 | 1.3 | 120.784 | GKS05-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 1.1                 | 4.7                 | -                | 27               | 187           | 250 | 1.1 | 126.933 | GKS05-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 1.1                 | 4.7                 | -                | 27               | 191           | 255 | 2.4 | 127.392 | GKS06-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 1.1                 | 4.7                 | -                | 27               | 187           | 250 | 2.6 | 127.059 | GKS06-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 1.1                 | 4.6                 | -                | 26               | 195           | 260 | 1.2 | 130.097 | GKS05-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 1.0                 | 4.3                 | -                | 24               | 207           | 277 | 1.9 | 140.816 | GKS06-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 1.0                 | 4.2                 | -                | 24               | 214           | 286 | 2.0 | 142.941 | GKS06-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 1.0                 | 4.1                 | -                | 23               | 219           | 293 | 1.0 | 146.588 | GKS05-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 0.9                 | 3.9                 | -                | 22               | 229           | 306 | 2.2 | 155.647 | GKS06-4M□□□063C42 | E84AV□□□7514□□□ | 300 |



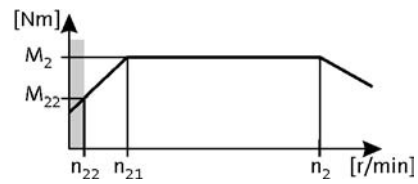
# GKS

## GKS [Nm] - MF□MA

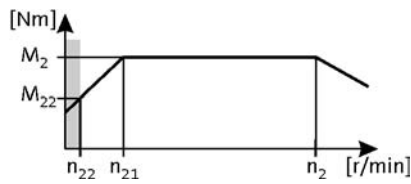
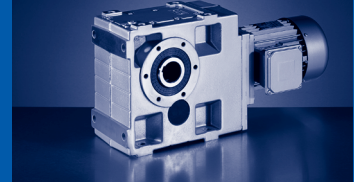
120 Hz:  $P_N = 0.75 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 141.7 \dots 3400 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$      |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|----------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |          |                   |                 |     |
| 0.9      | 3.7      | - | 21      | 241      | 322   | 1.9 | 161.029  | GKS06-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 0.9      | 3.6      | - | 20      | 249      | 333   | 1.0 | 166.276  | GKS05-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 0.8      | 3.4      | - | 20      | 257      | 343   | 1.5 | 174.336  | GKS06-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.8      | 3.4      | - | 19      | 264      | 353   | 2.9 | 179.201  | GKS07-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.8      | 3.2      | - | 18      | 285      | 380   | 1.8 | 190.080  | GKS06-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 0.7      | 3.0      | - | 17      | 298      | 399   | 1.7 | 202.588  | GKS06-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.7      | 2.8      | - | 16      | 321      | 428   | 1.4 | 214.133  | GKS06-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 0.6      | 2.7      | - | 15      | 330      | 442   | 1.2 | 224.524  | GKS06-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.6      | 2.6      | - | 15      | 345      | 462   | 1.5 | 230.688  | GKS06-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 0.6      | 2.7      | - | 15      | 328      | 438   | 2.3 | 222.909  | GKS07-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.6      | 2.4      | - | 14      | 371      | 496   | 1.4 | 252.000  | GKS06-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.6      | 2.3      | - | 13      | 389      | 520   | 1.2 | 259.880  | GKS06-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 0.5      | 2.2      | - | 12      | 411      | 549   | 0.9 | 279.286  | GKS06-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.5      | 2.1      | - | 12      | 437      | 583   | 1.2 | 291.600  | GKS06-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 0.5      | 2.2      | - | 12      | 402      | 537   | 1.9 | 273.199  | GKS07-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.5      | 1.9      | - | 11      | 466      | 623   | 1.1 | 316.800  | GKS06-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.4      | 1.9      | - | 11      | 472      | 631   | 2.0 | 321.049  | GKS07-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.4      | 1.8      | - | 10      | 492      | 657   | 0.9 | 328.500  | GKS06-3M□□□063C42 | E84AV□□□7514□□□ | 292 |
| 0.4      | 1.7      | - | 9.5     | 528      | 706   | 1.4 | 358.829  | GKS07-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.4      | 1.5      | - | 8.5     | 588      | 786   | 1.6 | 399.353  | GKS07-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.3      | 1.3      | - | 7.3     | 683      | 913   | 1.1 | 464.367  | GKS07-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.3      | 1.2      | - | 6.6     | 760      | 1017  | 1.2 | 516.810  | GKS07-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.3      | 1.1      | - | 6.0     | 829      | 1109  | 0.9 | 563.572  | GKS07-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.2      | 0.9      | - | 5.3     | 937      | 1252  | 1.0 | 636.581  | GKS07-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.2      | 0.7      | - | 4.2     | 1203     | 1608  | 1.8 | 817.551  | GKS09-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.2      | 0.7      | - | 3.7     | 1356     | 1812  | 1.6 | 921.367  | GKS09-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.1      | 0.6      | - | 3.4     | 1460     | 1952  | 1.5 | 992.209  | GKS09-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.1      | 0.5      | - | 3.0     | 1645     | 2199  | 1.3 | 1118.204 | GKS09-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.1      | 0.5      | - | 2.7     | 1845     | 2467  | 1.2 | 1254.197 | GKS09-4M□□□063C42 | E84AV□□□7514□□□ | 300 |
| 0.1      | 0.4      | - | 2.4     | 2080     | 2780  | 1.1 | 1413.461 | GKS09-4M□□□063C42 | E84AV□□□7514□□□ | 300 |

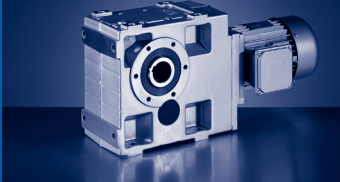


120 Hz:  $P_N = 1.10 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.4 \dots 3490 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i   |         |                   |                 |     |
|---------------------|---------------------|------------------|------------------|---------------|-----|-----|---------|-------------------|-----------------|-----|
| 16                  | 67                  | -                | 388              | 20            | 26  | 3.0 | 8.991   | GKS04-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 15                  | 61                  | -                | 355              | 22            | 28  | 2.9 | 9.836   | GKS04-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 11                  | 46                  | -                | 265              | 29            | 38  | 3.3 | 13.176  | GKS05-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 10                  | 42                  | -                | 244              | 32            | 41  | 3.0 | 14.333  | GKS04-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 7.1                 | 29                  | -                | 170              | 45            | 59  | 2.3 | 20.588  | GKS04-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 6.5                 | 27                  | -                | 155              | 49            | 64  | 2.1 | 22.522  | GKS04-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 5.8                 | 24                  | -                | 139              | 55            | 72  | 1.8 | 25.088  | GKS04-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 5.1                 | 21                  | -                | 122              | 63            | 82  | 1.7 | 28.727  | GKS04-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 4.9                 | 20                  | -                | 117              | 66            | 86  | 2.9 | 29.931  | GKS05-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 4.5                 | 19                  | -                | 109              | 70            | 92  | 1.4 | 32.000  | GKS04-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 4.4                 | 18                  | -                | 107              | 72            | 94  | 2.7 | 32.744  | GKS05-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 4.1                 | 17                  | -                | 99               | 77            | 101 | 1.4 | 35.191  | GKS04-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 3.9                 | 16                  | -                | 95               | 81            | 106 | 2.2 | 36.894  | GKS05-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 3.7                 | 15                  | -                | 89               | 86            | 112 | 1.1 | 39.200  | GKS04-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 3.5                 | 14                  | -                | 84               | 92            | 119 | 2.1 | 41.765  | GKS05-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 3.3                 | 14                  | -                | 79               | 97            | 127 | 1.3 | 44.240  | GKS04-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 3.1                 | 13                  | -                | 74               | 103           | 135 | 1.9 | 47.059  | GKS05-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 2.9                 | 12                  | -                | 69               | 112           | 146 | 1.1 | 50.943  | GKS04-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 2.8                 | 12                  | -                | 68               | 112           | 146 | 1.9 | 51.162  | GKS05-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 2.6                 | 11                  | -                | 61               | 125           | 163 | 1.0 | 56.976  | GKS04-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 2.5                 | 10                  | -                | 61               | 127           | 165 | 1.6 | 57.647  | GKS05-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 2.2                 | 9.2                 | -                | 54               | 143           | 186 | 2.9 | 65.207  | GKS06-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 2.2                 | 9.0                 | -                | 52               | 146           | 190 | 1.5 | 66.592  | GKS05-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 2.0                 | 8.3                 | -                | 49               | 158           | 206 | 2.9 | 72.000  | GKS06-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 1.9                 | 8.0                 | -                | 47               | 165           | 215 | 1.2 | 75.033  | GKS05-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 1.8                 | 7.4                 | -                | 43               | 178           | 232 | 2.3 | 81.111  | GKS06-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 1.8                 | 7.2                 | -                | 42               | 182           | 237 | 1.2 | 82.833  | GKS05-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 1.6                 | 6.4                 | -                | 38               | 205           | 266 | 2.3 | 93.176  | GKS06-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 1.6                 | 6.4                 | -                | 37               | 205           | 267 | 1.0 | 93.333  | GKS05-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 1.4                 | 5.8                 | -                | 34               | 224           | 292 | 2.0 | 103.721 | GKS06-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 1.4                 | 5.6                 | -                | 33               | 235           | 307 | 0.9 | 107.196 | GKS05-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 1.4                 | 5.7                 | -                | 33               | 230           | 300 | 1.8 | 104.967 | GKS06-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 1.3                 | 5.3                 | -                | 31               | 244           | 318 | 1.6 | 113.205 | GKS06-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 1.3                 | 5.3                 | -                | 31               | 248           | 323 | 2.1 | 113.082 | GKS06-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 1.3                 | 5.3                 | -                | 31               | 243           | 316 | 3.2 | 112.391 | GKS07-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 1.1                 | 4.7                 | -                | 28               | 274           | 357 | 1.8 | 127.059 | GKS06-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 1.1                 | 4.7                 | -                | 27               | 280           | 364 | 1.7 | 127.392 | GKS06-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 1.0                 | 4.3                 | -                | 25               | 304           | 396 | 1.3 | 140.816 | GKS06-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 1.1                 | 4.4                 | -                | 25               | 297           | 387 | 2.6 | 137.748 | GKS07-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 1.0                 | 4.2                 | -                | 24               | 314           | 409 | 1.6 | 142.941 | GKS06-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 0.9                 | 3.9                 | -                | 23               | 334           | 435 | 2.8 | 154.622 | GKS07-4M□□□071C32 | E84AV□□□1124□□□ | 300 |



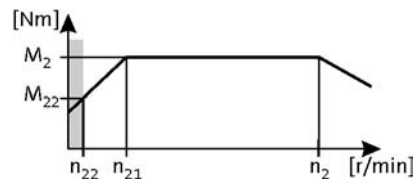
# GKS

## GKS [Nm] - MF□MA

120 Hz:  $P_N = 1.10 \text{ kW}$

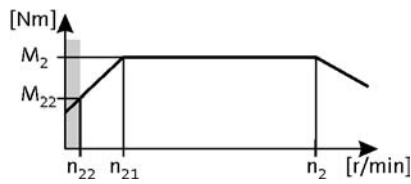
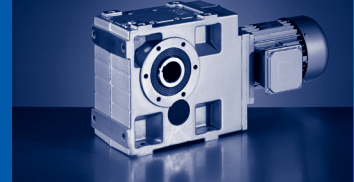
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.4 \dots 3490 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$      |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|----------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |          |                   |                 |     |
| 0.9      | 3.7      | - | 22      | 354      | 460   | 1.3 | 161.029  | GKS06-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 0.9      | 3.9      | - | 22      | 336      | 437   | 1.5 | 155.647  | GKS06-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.8      | 3.4      | - | 20      | 376      | 490   | 1.0 | 174.336  | GKS06-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.8      | 3.4      | - | 20      | 387      | 504   | 2.0 | 179.201  | GKS07-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.8      | 3.2      | - | 18      | 417      | 543   | 1.2 | 190.080  | GKS06-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 0.7      | 3.0      | - | 17      | 437      | 569   | 1.2 | 202.588  | GKS06-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.7      | 3.0      | - | 17      | 434      | 566   | 2.2 | 201.254  | GKS07-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.7      | 2.8      | - | 16      | 470      | 612   | 1.0 | 214.133  | GKS06-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 0.7      | 2.7      | - | 16      | 481      | 626   | 1.6 | 222.909  | GKS07-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.6      | 2.6      | - | 15      | 506      | 660   | 1.0 | 230.688  | GKS06-3M□□□071C32 | E84AV□□□1124□□□ | 292 |
| 0.6      | 2.4      | - | 14      | 544      | 708   | 0.9 | 252.000  | GKS06-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.6      | 2.4      | - | 14      | 532      | 693   | 1.8 | 246.659  | GKS07-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.5      | 2.2      | - | 13      | 590      | 768   | 1.3 | 273.199  | GKS07-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.5      | 1.9      | - | 11      | 693      | 902   | 1.4 | 321.049  | GKS07-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.5      | 1.9      | - | 11      | 698      | 909   | 3.2 | 323.365  | GKS09-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.4      | 1.7      | - | 9.7     | 774      | 1008  | 1.0 | 358.829  | GKS07-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.4      | 1.7      | - | 9.6     | 786      | 1024  | 2.9 | 364.427  | GKS09-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.4      | 1.5      | - | 8.7     | 862      | 1122  | 1.1 | 399.353  | GKS07-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.4      | 1.5      | - | 8.7     | 868      | 1130  | 2.5 | 402.234  | GKS09-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.3      | 1.3      | - | 7.7     | 978      | 1274  | 2.3 | 453.311  | GKS09-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.3      | 1.2      | - | 6.7     | 1123     | 1463  | 2.0 | 520.538  | GKS09-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.3      | 1.0      | - | 6.0     | 1266     | 1649  | 1.8 | 586.638  | GKS09-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.2      | 1.0      | - | 5.5     | 1363     | 1775  | 1.6 | 631.744  | GKS09-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.2      | 0.8      | - | 4.9     | 1536     | 2001  | 1.5 | 711.965  | GKS09-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.2      | 0.7      | - | 4.3     | 1764     | 2298  | 1.3 | 817.551  | GKS09-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.2      | 0.7      | - | 3.8     | 1988     | 2589  | 1.1 | 921.367  | GKS09-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.2      | 0.6      | - | 3.5     | 2141     | 2788  | 1.0 | 992.209  | GKS09-4M□□□071C32 | E84AV□□□1124□□□ | 300 |
| 0.1      | 0.5      | - | 3.1     | 2413     | 3143  | 0.9 | 1118.204 | GKS09-4M□□□071C32 | E84AV□□□1124□□□ | 300 |



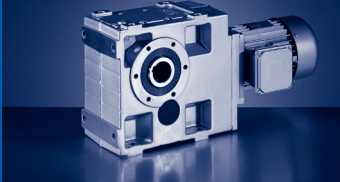


120 Hz:  $P_N = 1.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.8 \dots 3450 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i   |         |                   |                 |     |
|---------------------|---------------------|------------------|------------------|---------------|-----|-----|---------|-------------------|-----------------|-----|
| 16                  | 67                  | -                | 384              | 27            | 36  | 2.2 | 8.991   | GKS04-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 15                  | 61                  | -                | 351              | 29            | 39  | 2.1 | 9.836   | GKS04-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 11                  | 46                  | -                | 262              | 39            | 52  | 2.4 | 13.176  | GKS05-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 10                  | 42                  | -                | 241              | 43            | 57  | 2.2 | 14.333  | GKS04-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 7.0                 | 29                  | -                | 168              | 62            | 81  | 1.7 | 20.588  | GKS04-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 6.4                 | 27                  | -                | 153              | 67            | 89  | 1.6 | 22.522  | GKS04-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 5.7                 | 24                  | -                | 138              | 75            | 99  | 1.3 | 25.088  | GKS04-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 5.0                 | 21                  | -                | 120              | 86            | 113 | 1.2 | 28.727  | GKS04-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 4.8                 | 20                  | -                | 115              | 90            | 118 | 2.1 | 29.931  | GKS05-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 4.5                 | 19                  | -                | 108              | 96            | 126 | 1.0 | 32.000  | GKS04-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 4.4                 | 18                  | -                | 105              | 98            | 129 | 1.9 | 32.744  | GKS05-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 4.1                 | 17                  | -                | 98               | 105           | 139 | 1.0 | 35.191  | GKS04-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 4.0                 | 17                  | -                | 95               | 109           | 143 | 3.1 | 36.303  | GKS06-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 3.9                 | 16                  | -                | 94               | 110           | 146 | 1.6 | 36.894  | GKS05-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 3.4                 | 14                  | -                | 83               | 125           | 165 | 1.5 | 41.765  | GKS05-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 3.3                 | 14                  | -                | 78               | 132           | 175 | 0.9 | 44.240  | GKS04-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 3.1                 | 13                  | -                | 73               | 141           | 186 | 1.4 | 47.059  | GKS05-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 2.8                 | 12                  | -                | 67               | 153           | 202 | 1.4 | 51.162  | GKS05-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 2.5                 | 10                  | -                | 60               | 173           | 227 | 1.2 | 57.647  | GKS05-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 2.5                 | 10                  | -                | 60               | 173           | 228 | 2.6 | 57.882  | GKS06-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 2.2                 | 9.2                 | -                | 53               | 195           | 257 | 2.1 | 65.207  | GKS06-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 2.2                 | 9.0                 | -                | 52               | 199           | 263 | 1.1 | 66.592  | GKS05-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 2.0                 | 8.3                 | -                | 48               | 216           | 284 | 2.1 | 72.000  | GKS06-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 1.9                 | 8.0                 | -                | 46               | 225           | 296 | 0.9 | 75.033  | GKS05-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 1.8                 | 7.4                 | -                | 43               | 243           | 320 | 1.7 | 81.111  | GKS06-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 1.5                 | 6.4                 | -                | 37               | 279           | 368 | 1.6 | 93.176  | GKS06-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 1.4                 | 5.8                 | -                | 34               | 303           | 399 | 2.8 | 103.039 | GKS07-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 1.4                 | 5.7                 | -                | 33               | 314           | 414 | 1.3 | 104.967 | GKS06-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 1.4                 | 5.8                 | -                | 33               | 305           | 402 | 1.5 | 103.721 | GKS06-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 1.3                 | 5.3                 | -                | 31               | 333           | 439 | 1.2 | 113.205 | GKS06-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 1.3                 | 5.3                 | -                | 31               | 339           | 446 | 1.5 | 113.082 | GKS06-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 1.3                 | 5.3                 | -                | 31               | 331           | 436 | 2.3 | 112.391 | GKS07-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 1.1                 | 4.7                 | -                | 27               | 381           | 502 | 1.2 | 127.392 | GKS06-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 1.1                 | 4.7                 | -                | 27               | 374           | 493 | 1.3 | 127.059 | GKS06-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 1.1                 | 4.8                 | -                | 27               | 371           | 489 | 2.5 | 126.222 | GKS07-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 1.0                 | 4.3                 | -                | 25               | 414           | 546 | 0.9 | 140.816 | GKS06-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 1.0                 | 4.4                 | -                | 25               | 405           | 534 | 1.9 | 137.748 | GKS07-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 1.0                 | 4.2                 | -                | 24               | 428           | 564 | 1.2 | 142.941 | GKS06-3M□□□071C42 | E84AV□□□1524□□□ | 292 |
| 0.9                 | 3.9                 | -                | 22               | 458           | 603 | 1.1 | 155.647 | GKS06-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 0.9                 | 3.9                 | -                | 22               | 455           | 599 | 2.1 | 154.622 | GKS07-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 0.9                 | 3.7                 | -                | 21               | 482           | 635 | 1.0 | 161.029 | GKS06-3M□□□071C42 | E84AV□□□1524□□□ | 292 |



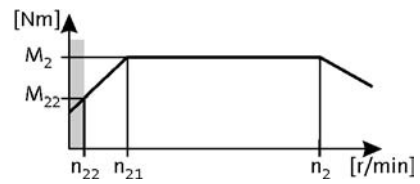
# GKS

GKS [Nm] - MF□MA

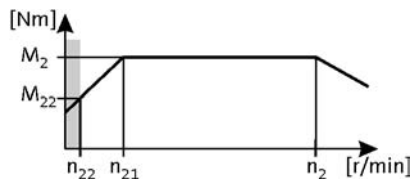
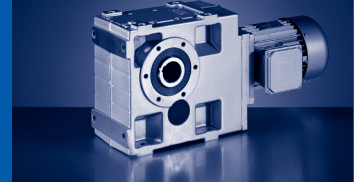
120 Hz:  $P_N = 1.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.8 \dots 3450 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 0.8      | 3.4      | - | 19      | 527      | 695   | 1.4 | 179.201 | GKS07-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 0.7      | 3.0      | - | 17      | 592      | 780   | 1.6 | 201.254 | GKS07-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 0.6      | 2.7      | - | 16      | 656      | 864   | 1.2 | 222.909 | GKS07-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 0.6      | 2.4      | - | 14      | 726      | 956   | 1.3 | 246.659 | GKS07-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 0.5      | 2.2      | - | 13      | 804      | 1059  | 0.9 | 273.199 | GKS07-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 0.5      | 1.9      | - | 11      | 945      | 1245  | 1.0 | 321.049 | GKS07-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 0.4      | 1.9      | - | 11      | 952      | 1254  | 2.3 | 323.365 | GKS09-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 0.4      | 1.7      | - | 9.5     | 1072     | 1413  | 2.1 | 364.427 | GKS09-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 0.4      | 1.5      | - | 8.6     | 1184     | 1559  | 1.9 | 402.234 | GKS09-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 0.3      | 1.3      | - | 7.6     | 1334     | 1757  | 1.7 | 453.311 | GKS09-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 0.3      | 1.2      | - | 6.6     | 1532     | 2018  | 1.4 | 520.538 | GKS09-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 0.3      | 1.0      | - | 5.9     | 1726     | 2274  | 1.3 | 586.638 | GKS09-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 0.2      | 1.0      | - | 5.5     | 1859     | 2449  | 1.2 | 631.744 | GKS09-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 0.2      | 0.8      | - | 4.9     | 2095     | 2760  | 1.1 | 711.965 | GKS09-4M□□□071C42 | E84AV□□□1524□□□ | 300 |
| 0.2      | 0.7      | - | 4.2     | 2406     | 3169  | 0.9 | 817.551 | GKS09-4M□□□071C42 | E84AV□□□1524□□□ | 300 |

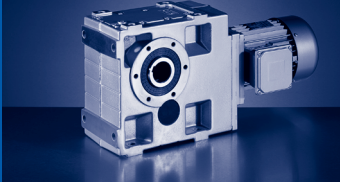


120 Hz:  $P_N = 2.20 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.8 \dots 3500 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i       |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|---------|-------------------|-----------------|-----|
| 16                  | 67                  | - | 389              | 38               | 51            | 1.5 | 8.991   | GKS04-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 15                  | 61                  | - | 356              | 42               | 56            | 1.4 | 9.836   | GKS04-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 13                  | 53                  | - | 308              | 49               | 65            | 3.8 | 11.382  | GKS06-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 11                  | 46                  | - | 266              | 56               | 75            | 1.7 | 13.176  | GKS05-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 10                  | 42                  | - | 244              | 61               | 82            | 1.5 | 14.333  | GKS04-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 8.2                 | 34                  | - | 197              | 76               | 102           | 3.8 | 17.809  | GKS06-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 7.1                 | 29                  | - | 170              | 88               | 117           | 1.2 | 20.588  | GKS04-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 6.5                 | 27                  | - | 155              | 96               | 128           | 1.1 | 22.522  | GKS04-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 5.6                 | 23                  | - | 135              | 111              | 148           | 3.5 | 26.017  | GKS06-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 5.1                 | 21                  | - | 123              | 122              | 162           | 3.2 | 28.461  | GKS06-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 4.9                 | 20                  | - | 117              | 128              | 171           | 1.5 | 29.931  | GKS05-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 4.6                 | 19                  | - | 109              | 137              | 183           | 2.5 | 32.063  | GKS06-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 4.5                 | 18                  | - | 107              | 140              | 187           | 1.3 | 32.744  | GKS05-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 4.0                 | 17                  | - | 96               | 155              | 207           | 2.5 | 36.303  | GKS06-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 4.0                 | 16                  | - | 95               | 158              | 210           | 1.1 | 36.894  | GKS05-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 3.5                 | 14                  | - | 84               | 179              | 238           | 1.0 | 41.765  | GKS05-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 3.3                 | 14                  | - | 79               | 190              | 254           | 2.3 | 44.471  | GKS06-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 3.1                 | 13                  | - | 74               | 201              | 268           | 1.0 | 47.059  | GKS05-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 2.9                 | 12                  | - | 68               | 219              | 292           | 1.0 | 51.162  | GKS05-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 2.8                 | 11                  | - | 66               | 227              | 303           | 2.0 | 53.074  | GKS06-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 2.5                 | 10                  | - | 61               | 247              | 330           | 1.8 | 57.882  | GKS06-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 2.2                 | 9.2                 | - | 54               | 279              | 372           | 1.4 | 65.207  | GKS06-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 2.3                 | 9.3                 | - | 54               | 277              | 369           | 2.8 | 64.790  | GKS07-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 2.1                 | 8.5                 | - | 50               | 301              | 402           | 2.8 | 70.474  | GKS07-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 2.0                 | 8.3                 | - | 49               | 308              | 411           | 1.5 | 72.000  | GKS06-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 1.8                 | 7.6                 | - | 44               | 339              | 453           | 2.3 | 79.407  | GKS07-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 1.8                 | 7.4                 | - | 43               | 347              | 463           | 1.2 | 81.111  | GKS06-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 1.6                 | 6.4                 | - | 38               | 398              | 531           | 1.1 | 93.176  | GKS06-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 1.6                 | 6.5                 | - | 38               | 396              | 528           | 2.2 | 92.563  | GKS07-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 1.4                 | 5.8                 | - | 34               | 436              | 581           | 1.0 | 103.721 | GKS06-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 1.4                 | 5.8                 | - | 34               | 446              | 595           | 1.8 | 104.296 | GKS07-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 1.4                 | 5.8                 | - | 34               | 433              | 578           | 1.9 | 103.039 | GKS07-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 1.4                 | 5.7                 | - | 33               | 449              | 599           | 0.9 | 104.967 | GKS06-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 1.3                 | 5.3                 | - | 31               | 483              | 645           | 1.0 | 113.082 | GKS06-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 1.3                 | 5.3                 | - | 31               | 472              | 630           | 1.6 | 112.391 | GKS07-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 1.3                 | 5.3                 | - | 31               | 480              | 641           | 2.0 | 112.338 | GKS07-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 1.2                 | 4.7                 | - | 28               | 534              | 712           | 0.9 | 127.059 | GKS06-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 1.2                 | 4.7                 | - | 28               | 541              | 722           | 1.6 | 126.578 | GKS07-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 1.2                 | 4.8                 | - | 28               | 530              | 708           | 1.7 | 126.222 | GKS07-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 1.1                 | 4.4                 | - | 25               | 579              | 772           | 1.3 | 137.748 | GKS07-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 1.0                 | 4.3                 | - | 25               | 601              | 801           | 1.6 | 140.548 | GKS07-3M□□□080C32 | E84AV□□□2224□□□ | 292 |

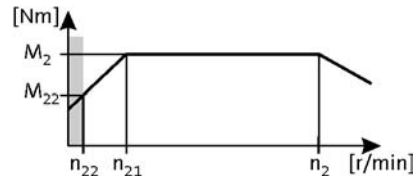


**GKS**  
GKS [Nm] - MF□MA

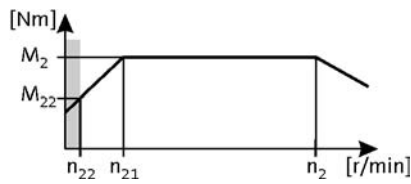
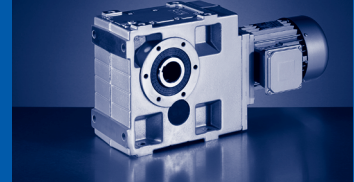
120 Hz:  $P_N = 2.20 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.8 \dots 3500 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$      |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|----------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |          |                   |                 |     |
| 0.9      | 3.9      | - | 23      | 650      | 867   | 1.4 | 154.622  | GKS07-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.9      | 3.8      | - | 22      | 677      | 903   | 1.3 | 158.364  | GKS07-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 0.9      | 3.5      | - | 21      | 715      | 954   | 3.0 | 170.188  | GKS09-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.8      | 3.4      | - | 20      | 753      | 1004  | 1.0 | 179.201  | GKS07-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.8      | 3.3      | - | 19      | 789      | 1053  | 1.2 | 184.600  | GKS07-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 0.7      | 2.9      | - | 17      | 889      | 1186  | 1.0 | 208.000  | GKS07-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 0.7      | 3.0      | - | 17      | 846      | 1128  | 1.1 | 201.254  | GKS07-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.7      | 2.9      | - | 17      | 860      | 1147  | 2.5 | 204.596  | GKS09-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.7      | 2.7      | - | 16      | 958      | 1277  | 1.0 | 224.037  | GKS07-3M□□□080C32 | E84AV□□□2224□□□ | 292 |
| 0.6      | 2.6      | - | 15      | 969      | 1292  | 2.2 | 230.577  | GKS09-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.6      | 2.4      | - | 14      | 1036     | 1383  | 0.9 | 246.659  | GKS07-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.6      | 2.4      | - | 14      | 1044     | 1393  | 2.1 | 248.439  | GKS09-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.5      | 2.1      | - | 13      | 1176     | 1569  | 1.9 | 279.986  | GKS09-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.5      | 1.9      | - | 11      | 1359     | 1812  | 1.6 | 323.365  | GKS09-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.5      | 1.9      | - | 11      | 1357     | 1810  | 3.1 | 322.931  | GKS11-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.4      | 1.7      | - | 9.6     | 1531     | 2043  | 1.4 | 364.427  | GKS09-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.4      | 1.7      | - | 9.6     | 1529     | 2040  | 2.8 | 363.866  | GKS11-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.4      | 1.5      | - | 8.8     | 1663     | 2218  | 2.6 | 395.787  | GKS11-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.4      | 1.5      | - | 8.7     | 1690     | 2255  | 1.3 | 402.234  | GKS09-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.3      | 1.4      | - | 7.9     | 1874     | 2500  | 2.3 | 445.958  | GKS11-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.3      | 1.3      | - | 7.7     | 1905     | 2541  | 1.1 | 453.311  | GKS09-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.3      | 1.2      | - | 6.8     | 2152     | 2871  | 2.0 | 512.196  | GKS11-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.3      | 1.2      | - | 6.7     | 2187     | 2918  | 1.0 | 520.538  | GKS09-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.3      | 1.0      | - | 6.1     | 2425     | 3235  | 1.8 | 577.122  | GKS11-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.2      | 1.0      | - | 5.6     | 2612     | 3484  | 1.6 | 621.619  | GKS11-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.2      | 0.9      | - | 5.0     | 2943     | 3926  | 1.5 | 700.416  | GKS11-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.2      | 0.7      | - | 4.3     | 3431     | 4576  | 1.2 | 816.455  | GKS11-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.2      | 0.7      | - | 3.8     | 3865     | 5156  | 1.1 | 919.949  | GKS11-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.2      | 0.6      | - | 3.5     | 4163     | 5554  | 1.0 | 990.879  | GKS11-4M□□□080C32 | E84AV□□□2224□□□ | 300 |
| 0.1      | 0.5      | - | 3.1     | 4691     | 6258  | 0.9 | 1116.484 | GKS11-4M□□□080C32 | E84AV□□□2224□□□ | 300 |

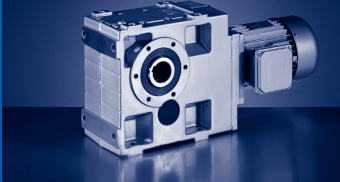


120 Hz:  $P_N = 3.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c    | i   |         |                   |                 |     |
|---------------------|---------------------|------------------|------------------|---------------|------|-----|---------|-------------------|-----------------|-----|
| 16                  | 100                 | -                | 387              | 53            | 70   | 1.1 | 8.991   | GKS04-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 15                  | 92                  | -                | 354              | 58            | 77   | 1.0 | 9.836   | GKS04-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 13                  | 79                  | -                | 306              | 67            | 89   | 2.8 | 11.382  | GKS06-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 11                  | 68                  | -                | 264              | 77            | 103  | 1.2 | 13.176  | GKS05-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 10                  | 63                  | -                | 243              | 84            | 112  | 1.1 | 14.333  | GKS04-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 8.1                 | 51                  | -                | 195              | 105           | 139  | 2.8 | 17.809  | GKS06-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 5.6                 | 35                  | -                | 134              | 153           | 204  | 2.5 | 26.017  | GKS06-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 5.1                 | 32                  | -                | 122              | 167           | 223  | 2.3 | 28.461  | GKS06-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 4.8                 | 30                  | -                | 116              | 176           | 234  | 1.1 | 29.931  | GKS05-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 4.5                 | 28                  | -                | 109              | 188           | 251  | 1.8 | 32.063  | GKS06-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 4.4                 | 28                  | -                | 106              | 192           | 256  | 1.0 | 32.744  | GKS05-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 4.0                 | 25                  | -                | 97               | 212           | 282  | 3.1 | 36.063  | GKS07-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 4.0                 | 25                  | -                | 96               | 213           | 284  | 1.8 | 36.303  | GKS06-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 3.3                 | 20                  | -                | 78               | 261           | 348  | 1.7 | 44.471  | GKS06-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 2.7                 | 17                  | -                | 66               | 311           | 415  | 1.4 | 53.074  | GKS06-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 2.5                 | 16                  | -                | 61               | 337           | 450  | 2.5 | 57.501  | GKS07-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 2.5                 | 16                  | -                | 60               | 340           | 453  | 1.3 | 57.882  | GKS06-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 2.2                 | 14                  | -                | 54               | 380           | 507  | 2.0 | 64.790  | GKS07-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 2.2                 | 14                  | -                | 53               | 382           | 510  | 1.1 | 65.207  | GKS06-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 2.1                 | 13                  | -                | 49               | 413           | 551  | 2.1 | 70.474  | GKS07-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 2.0                 | 13                  | -                | 48               | 422           | 563  | 1.1 | 72.000  | GKS06-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 1.8                 | 11                  | -                | 44               | 466           | 621  | 1.7 | 79.407  | GKS07-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 1.6                 | 9.7                 | -                | 38               | 543           | 724  | 1.6 | 92.563  | GKS07-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 1.4                 | 8.7                 | -                | 34               | 594           | 792  | 1.4 | 103.039 | GKS07-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 1.4                 | 8.6                 | -                | 33               | 612           | 816  | 1.3 | 104.296 | GKS07-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 1.3                 | 8.0                 | -                | 31               | 648           | 864  | 1.2 | 112.391 | GKS07-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 1.3                 | 8.0                 | -                | 31               | 659           | 879  | 1.4 | 112.338 | GKS07-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 1.2                 | 7.1                 | -                | 28               | 742           | 990  | 1.2 | 126.578 | GKS07-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 1.2                 | 7.1                 | -                | 28               | 728           | 970  | 1.3 | 126.222 | GKS07-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 1.2                 | 7.3                 | -                | 28               | 711           | 948  | 3.0 | 123.275 | GKS09-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 1.1                 | 6.5                 | -                | 25               | 794           | 1059 | 0.9 | 137.748 | GKS07-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 1.0                 | 6.4                 | -                | 25               | 824           | 1099 | 1.2 | 140.548 | GKS07-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 1.0                 | 6.5                 | -                | 25               | 801           | 1068 | 2.7 | 138.929 | GKS09-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 0.9                 | 5.8                 | -                | 23               | 891           | 1189 | 1.0 | 154.622 | GKS07-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 1.0                 | 6.0                 | -                | 23               | 871           | 1161 | 2.5 | 151.012 | GKS09-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 0.9                 | 5.7                 | -                | 22               | 929           | 1238 | 0.9 | 158.364 | GKS07-3M□□□080C42 | E84AV□□□3024□□S | 292 |
| 0.9                 | 5.3                 | -                | 20               | 981           | 1308 | 2.2 | 170.188 | GKS09-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 0.7                 | 4.4                 | -                | 17               | 1180          | 1573 | 1.8 | 204.596 | GKS09-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 0.6                 | 3.9                 | -                | 15               | 1329          | 1773 | 1.6 | 230.577 | GKS09-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 0.6                 | 3.6                 | -                | 14               | 1432          | 1910 | 1.5 | 248.439 | GKS09-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 0.5                 | 3.2                 | -                | 12               | 1614          | 2152 | 1.4 | 279.986 | GKS09-4M□□□080C42 | E84AV□□□3024□□S | 300 |



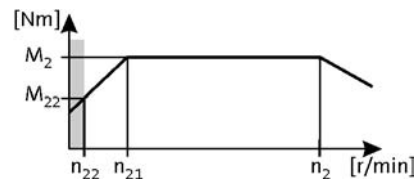
# GKS

GKS [Nm] - MF□MA

120 Hz:  $P_N = 3.00 \text{ kW}$

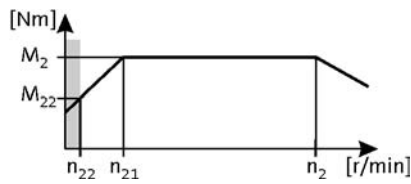
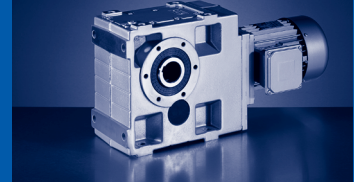
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 0.5      | 2.8      | - | 11      | 1864     | 2486  | 1.2 | 323.365 | GKS09-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 0.5      | 2.8      | - | 11      | 1862     | 2482  | 2.3 | 322.931 | GKS11-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 0.4      | 2.5      | - | 9.6     | 2101     | 2801  | 1.0 | 364.427 | GKS09-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 0.4      | 2.5      | - | 9.6     | 2098     | 2797  | 2.1 | 363.866 | GKS11-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 0.4      | 2.3      | - | 8.8     | 2282     | 3042  | 1.9 | 395.787 | GKS11-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 0.4      | 2.2      | - | 8.7     | 2319     | 3092  | 0.9 | 402.234 | GKS09-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 0.3      | 2.0      | - | 7.8     | 2571     | 3428  | 1.7 | 445.958 | GKS11-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 0.3      | 1.8      | - | 6.8     | 2953     | 3937  | 1.4 | 512.196 | GKS11-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 0.3      | 1.6      | - | 6.0     | 3327     | 4436  | 1.3 | 577.122 | GKS11-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 0.2      | 1.5      | - | 5.6     | 3584     | 4778  | 1.2 | 621.619 | GKS11-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 0.2      | 1.3      | - | 5.0     | 4038     | 5384  | 1.1 | 700.416 | GKS11-4M□□□080C42 | E84AV□□□3024□□S | 300 |
| 0.2      | 1.1      | - | 4.3     | 4707     | 6276  | 0.9 | 816.455 | GKS11-4M□□□080C42 | E84AV□□□3024□□S | 300 |



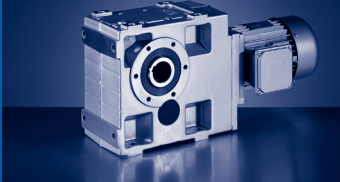


120 Hz:  $P_N = 4.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i       |                   |                 |     |
|---------------------|---------------------|------------------|------------------|---------------|-----|---------|-------------------|-----------------|-----|
| 13                  | 53                  | -                | 306              | 83            | 2.1 | 11.382  | GKS06-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 11                  | 46                  | -                | 264              | 96            | 0.9 | 13.176  | GKS05-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 8.1                 | 34                  | -                | 195              | 130           | 2.1 | 17.809  | GKS06-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 5.6                 | 23                  | -                | 134              | 190           | 1.9 | 26.017  | GKS06-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 5.1                 | 21                  | -                | 122              | 208           | 1.7 | 28.461  | GKS06-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 4.5                 | 19                  | -                | 109              | 234           | 1.4 | 32.063  | GKS06-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 4.0                 | 17                  | -                | 97               | 263           | 2.6 | 36.063  | GKS07-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 4.0                 | 17                  | -                | 96               | 265           | 1.4 | 36.303  | GKS06-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 3.3                 | 14                  | -                | 78               | 325           | 1.3 | 44.471  | GKS06-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 2.7                 | 11                  | -                | 66               | 387           | 1.1 | 53.074  | GKS06-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 2.5                 | 10                  | -                | 61               | 420           | 1.9 | 57.501  | GKS07-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 2.5                 | 10                  | -                | 60               | 423           | 1.0 | 57.882  | GKS06-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 2.2                 | 9.3                 | -                | 54               | 473           | 1.5 | 64.790  | GKS07-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 2.1                 | 8.5                 | -                | 49               | 514           | 1.5 | 70.474  | GKS07-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 1.8                 | 7.6                 | -                | 44               | 580           | 1.2 | 79.407  | GKS07-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 1.6                 | 6.5                 | -                | 38               | 676           | 1.2 | 92.563  | GKS07-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 1.6                 | 6.5                 | -                | 38               | 671           | 2.3 | 91.860  | GKS09-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 1.4                 | 6.0                 | -                | 35               | 721           | 2.5 | 100.551 | GKS09-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 1.4                 | 5.8                 | -                | 34               | 739           | 1.0 | 103.039 | GKS07-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 1.4                 | 5.8                 | -                | 34               | 756           | 2.3 | 103.524 | GKS09-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 1.4                 | 5.8                 | -                | 33               | 761           | 1.0 | 104.296 | GKS07-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 1.3                 | 5.3                 | -                | 31               | 820           | 1.1 | 112.338 | GKS07-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 1.3                 | 5.4                 | -                | 31               | 814           | 2.2 | 111.484 | GKS09-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 1.3                 | 5.3                 | -                | 31               | 813           | 2.5 | 113.320 | GKS09-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 1.2                 | 4.8                 | -                | 28               | 906           | 1.0 | 126.222 | GKS07-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 1.2                 | 4.8                 | -                | 28               | 917           | 2.2 | 125.641 | GKS09-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 1.2                 | 4.9                 | -                | 28               | 884           | 2.3 | 123.275 | GKS09-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 1.0                 | 4.3                 | -                | 25               | 1029          | 1.7 | 140.921 | GKS09-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 1.0                 | 4.3                 | -                | 25               | 997           | 2.0 | 138.929 | GKS09-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 1.0                 | 4.0                 | -                | 23               | 1083          | 1.9 | 151.012 | GKS09-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 0.9                 | 3.8                 | -                | 22               | 1159          | 1.7 | 158.816 | GKS09-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 0.9                 | 3.5                 | -                | 20               | 1221          | 1.6 | 170.188 | GKS09-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 0.8                 | 3.3                 | -                | 19               | 1328          | 1.5 | 182.000 | GKS09-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 0.7                 | 2.9                 | -                | 17               | 1468          | 1.4 | 204.596 | GKS09-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 0.7                 | 2.9                 | -                | 17               | 1497          | 1.4 | 205.111 | GKS09-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 0.7                 | 2.7                 | -                | 16               | 1612          | 1.3 | 220.882 | GKS09-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 0.6                 | 2.6                 | -                | 15               | 1654          | 1.2 | 230.577 | GKS09-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 0.6                 | 2.4                 | -                | 14               | 1782          | 1.1 | 248.439 | GKS09-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 0.6                 | 2.4                 | -                | 14               | 1817          | 1.1 | 248.930 | GKS09-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 0.5                 | 2.2                 | -                | 13               | 2038          | 1.0 | 279.205 | GKS09-3M□□□090C32 | E84AV□□□4024□□□ | 292 |
| 0.5                 | 2.1                 | -                | 12               | 2009          | 1.0 | 279.986 | GKS09-4M□□□090C32 | E84AV□□□4024□□□ | 300 |



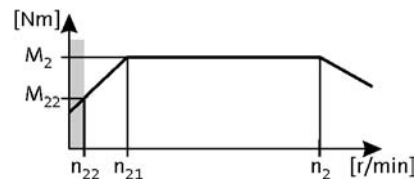
# GKS

## GKS [Nm] - MF□MA

120 Hz:  $P_N = 4.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

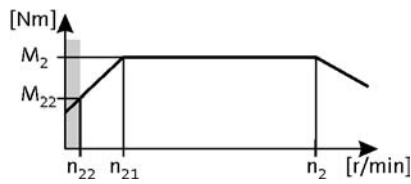
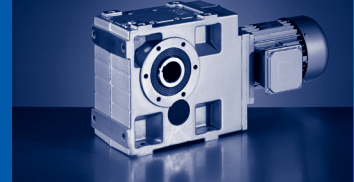
$n_1 = 145.0 \dots 3480 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$      |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|----------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  | - | [r/min] | [Nm]     | [Nm]  |     |          |                   |                 |     |
| 0.5      | 1.9      | - | 11      | 2317     | 3310  | 1.7 | 322.931  | GKS11-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 0.4      | 1.7      | - | 9.6     | 2611     | 3729  | 1.5 | 363.866  | GKS11-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 0.4      | 1.5      | - | 8.8     | 2840     | 4057  | 1.4 | 395.787  | GKS11-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 0.3      | 1.4      | - | 7.8     | 3200     | 4571  | 1.3 | 445.958  | GKS11-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 0.3      | 1.2      | - | 6.8     | 3675     | 5250  | 1.1 | 512.196  | GKS11-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 0.3      | 1.0      | - | 6.0     | 4141     | 5915  | 1.0 | 577.122  | GKS11-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 0.2      | 0.7      | - | 4.3     | 5782     | 8260  | 1.3 | 805.901  | GKS14-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 0.2      | 0.7      | - | 3.8     | 6515     | 9307  | 1.2 | 908.058  | GKS14-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 0.2      | 0.6      | - | 3.6     | 7017     | 10025 | 1.1 | 978.071  | GKS14-4M□□□090C32 | E84AV□□□4024□□□ | 300 |
| 0.1      | 0.5      | - | 3.2     | 7907     | 11295 | 1.0 | 1102.052 | GKS14-4M□□□090C32 | E84AV□□□4024□□□ | 300 |





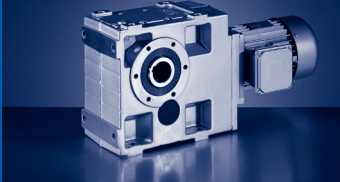


120 Hz:  $P_N = 5.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 146.9 \dots 3525 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | c   | i       |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 13       | 53       | - | 310     | 113      | 161   | 1.5 | 11.382  | GKS06-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 13       | 53       | - | 310     | 113      | 161   | 2.9 | 11.378  | GKS07-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 8.5      | 35       | - | 204     | 171      | 244   | 3.1 | 17.270  | GKS07-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 8.3      | 34       | - | 198     | 176      | 252   | 1.5 | 17.809  | GKS06-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 5.8      | 24       | - | 140     | 250      | 357   | 2.5 | 25.244  | GKS07-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 5.7      | 23       | - | 136     | 258      | 368   | 1.4 | 26.017  | GKS06-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 5.2      | 21       | - | 125     | 280      | 400   | 2.3 | 28.274  | GKS07-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 5.2      | 21       | - | 124     | 282      | 403   | 1.3 | 28.461  | GKS06-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 4.6      | 19       | - | 111     | 316      | 451   | 2.0 | 31.858  | GKS07-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 4.6      | 19       | - | 110     | 318      | 454   | 1.0 | 32.063  | GKS06-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 4.1      | 17       | - | 98      | 357      | 510   | 1.9 | 36.063  | GKS07-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 4.1      | 17       | - | 97      | 360      | 514   | 1.0 | 36.303  | GKS06-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 3.7      | 15       | - | 89      | 393      | 561   | 4.0 | 39.662  | GKS09-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 3.3      | 14       | - | 80      | 438      | 625   | 1.8 | 44.178  | GKS07-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 3.3      | 14       | - | 79      | 441      | 629   | 0.9 | 44.471  | GKS06-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 2.9      | 12       | - | 70      | 499      | 713   | 1.6 | 50.345  | GKS07-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 2.6      | 10       | - | 61      | 570      | 814   | 1.4 | 57.501  | GKS07-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 2.5      | 10       | - | 60      | 579      | 827   | 3.1 | 58.456  | GKS09-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 2.3      | 9.3      | - | 54      | 642      | 917   | 1.1 | 64.790  | GKS07-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 2.2      | 9.1      | - | 54      | 653      | 932   | 2.8 | 65.879  | GKS09-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 2.1      | 8.5      | - | 50      | 698      | 998   | 1.1 | 70.474  | GKS07-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 2.1      | 8.5      | - | 50      | 703      | 1005  | 2.6 | 70.982  | GKS09-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 1.9      | 7.6      | - | 44      | 787      | 1124  | 0.9 | 79.407  | GKS07-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 1.8      | 7.5      | - | 44      | 793      | 1132  | 2.3 | 79.996  | GKS09-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 1.6      | 6.5      | - | 38      | 910      | 1300  | 2.0 | 91.860  | GKS09-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 1.6      | 6.5      | - | 38      | 909      | 1298  | 2.9 | 91.737  | GKS11-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 1.5      | 6.0      | - | 35      | 979      | 1399  | 1.9 | 100.551 | GKS09-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 1.4      | 5.8      | - | 34      | 1026     | 1465  | 1.8 | 103.524 | GKS09-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 1.4      | 5.8      | - | 34      | 1024     | 1463  | 2.9 | 103.365 | GKS11-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 1.3      | 5.4      | - | 32      | 1105     | 1578  | 1.8 | 111.484 | GKS09-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 1.3      | 5.4      | - | 32      | 1103     | 1576  | 2.7 | 111.335 | GKS11-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 1.3      | 5.3      | - | 31      | 1104     | 1577  | 1.8 | 113.320 | GKS09-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 1.2      | 4.9      | - | 29      | 1201     | 1715  | 1.7 | 123.275 | GKS09-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 1.2      | 4.8      | - | 28      | 1245     | 1778  | 1.6 | 125.641 | GKS09-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 1.2      | 4.8      | - | 28      | 1243     | 1776  | 2.7 | 125.448 | GKS11-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 1.2      | 4.8      | - | 28      | 1218     | 1741  | 3.2 | 125.095 | GKS11-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 1.0      | 4.3      | - | 25      | 1396     | 1995  | 1.4 | 140.921 | GKS09-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 1.1      | 4.3      | - | 25      | 1353     | 1933  | 1.5 | 138.929 | GKS09-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 1.0      | 4.3      | - | 25      | 1394     | 1992  | 2.2 | 140.732 | GKS11-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 1.0      | 4.3      | - | 25      | 1373     | 1961  | 2.9 | 140.952 | GKS11-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 1.0      | 4.0      | - | 23      | 1471     | 2101  | 1.4 | 151.012 | GKS09-4M□□□100C12 | E84AV□□□5524□□□ | 300 |



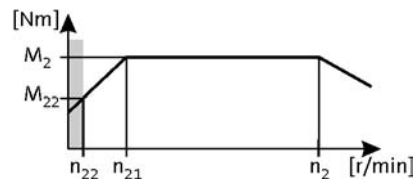
# GKS

GKS [Nm] - MF□MA

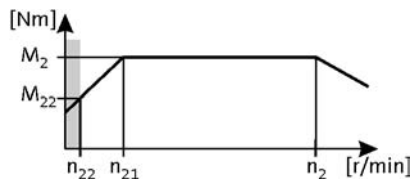
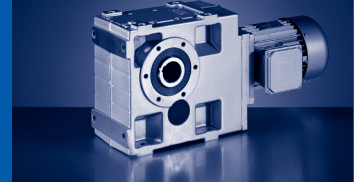
120 Hz:  $P_N = 5.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 146.9 \dots 3525 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 1.0      | 3.9      | - | 23      | 1492     | 2132  | 2.6 | 153.242 | GKS11-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.9      | 3.8      | - | 22      | 1574     | 2248  | 1.3 | 158.816 | GKS09-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 0.9      | 3.8      | - | 22      | 1571     | 2244  | 2.2 | 158.571 | GKS11-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 0.9      | 3.5      | - | 21      | 1658     | 2368  | 1.2 | 170.188 | GKS09-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.9      | 3.5      | - | 20      | 1682     | 2402  | 2.3 | 172.667 | GKS11-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.8      | 3.3      | - | 19      | 1803     | 2576  | 1.1 | 182.000 | GKS09-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 0.8      | 3.2      | - | 19      | 1849     | 2641  | 2.1 | 186.572 | GKS11-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 0.7      | 3.0      | - | 18      | 1966     | 2809  | 2.0 | 201.890 | GKS11-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.7      | 2.9      | - | 17      | 2032     | 2903  | 1.0 | 205.111 | GKS09-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 0.7      | 2.9      | - | 17      | 1993     | 2847  | 1.0 | 204.596 | GKS09-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.7      | 2.9      | - | 17      | 2083     | 2975  | 1.9 | 210.222 | GKS11-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 0.7      | 2.7      | - | 16      | 2188     | 3126  | 0.9 | 220.882 | GKS09-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 0.7      | 2.7      | - | 16      | 2243     | 3205  | 1.8 | 226.431 | GKS11-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 0.7      | 2.6      | - | 16      | 2216     | 3165  | 1.8 | 227.481 | GKS11-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.6      | 2.6      | - | 15      | 2246     | 3208  | 0.9 | 230.577 | GKS09-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.6      | 2.4      | - | 14      | 2528     | 3611  | 1.5 | 255.133 | GKS11-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 0.6      | 2.4      | - | 14      | 2416     | 3452  | 1.6 | 248.106 | GKS11-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.5      | 2.2      | - | 13      | 2723     | 3890  | 1.5 | 279.556 | GKS11-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.5      | 2.1      | - | 12      | 2836     | 4051  | 1.4 | 286.219 | GKS11-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 0.5      | 1.9      | - | 11      | 3195     | 4565  | 1.2 | 322.500 | GKS11-3M□□□100C12 | E84AV□□□5524□□□ | 292 |
| 0.5      | 1.9      | - | 11      | 3145     | 4493  | 1.3 | 322.931 | GKS11-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.5      | 1.9      | - | 11      | 3133     | 4476  | 2.4 | 321.729 | GKS14-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.4      | 1.7      | - | 9.7     | 3544     | 5063  | 1.1 | 363.866 | GKS11-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.4      | 1.7      | - | 9.7     | 3531     | 5044  | 2.2 | 362.512 | GKS14-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.4      | 1.5      | - | 9.0     | 3805     | 5435  | 2.0 | 390.671 | GKS14-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.4      | 1.5      | - | 8.9     | 3855     | 5507  | 1.0 | 395.787 | GKS11-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.3      | 1.4      | - | 8.0     | 4287     | 6124  | 1.8 | 440.193 | GKS14-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.3      | 1.4      | - | 7.9     | 4343     | 6205  | 0.9 | 445.958 | GKS11-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.3      | 1.2      | - | 6.9     | 4997     | 7139  | 1.5 | 513.121 | GKS14-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.3      | 1.0      | - | 6.1     | 5631     | 8044  | 1.4 | 578.164 | GKS14-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.2      | 1.0      | - | 5.7     | 6065     | 8664  | 1.3 | 622.742 | GKS14-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.2      | 0.9      | - | 5.0     | 6834     | 9763  | 1.1 | 701.681 | GKS14-4M□□□100C12 | E84AV□□□5524□□□ | 300 |
| 0.2      | 0.7      | - | 4.4     | 7849     | 11213 | 1.0 | 805.901 | GKS14-4M□□□100C12 | E84AV□□□5524□□□ | 300 |

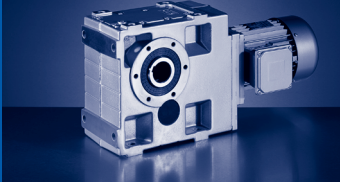


120 Hz:  $P_N = 7.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 146.5 \dots 3515 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i       |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|---------|-------------------|-----------------|-----|
| 13                  | 53                  | - | 309              | 154              | 220           | 1.1 | 11.382  | GKS06-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 13                  | 53                  | - | 309              | 154              | 220           | 2.1 | 11.378  | GKS07-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 8.5                 | 35                  | - | 204              | 234              | 334           | 2.2 | 17.270  | GKS07-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 8.2                 | 34                  | - | 197              | 241              | 345           | 1.1 | 17.809  | GKS06-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 5.8                 | 24                  | - | 139              | 342              | 489           | 1.8 | 25.244  | GKS07-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 5.6                 | 23                  | - | 135              | 353              | 504           | 1.0 | 26.017  | GKS06-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 5.2                 | 21                  | - | 124              | 386              | 551           | 0.9 | 28.461  | GKS06-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 5.2                 | 21                  | - | 124              | 383              | 547           | 1.7 | 28.274  | GKS07-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 4.6                 | 19                  | - | 110              | 432              | 617           | 1.4 | 31.858  | GKS07-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 4.2                 | 17                  | - | 100              | 477              | 681           | 3.1 | 35.193  | GKS09-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 4.1                 | 17                  | - | 98               | 489              | 698           | 1.4 | 36.063  | GKS07-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 3.7                 | 15                  | - | 89               | 537              | 768           | 2.9 | 39.662  | GKS09-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 3.3                 | 14                  | - | 80               | 599              | 855           | 1.3 | 44.178  | GKS07-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 2.9                 | 12                  | - | 70               | 682              | 975           | 1.1 | 50.345  | GKS07-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 2.6                 | 10                  | - | 61               | 779              | 1113          | 1.0 | 57.501  | GKS07-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 2.5                 | 10                  | - | 60               | 792              | 1131          | 2.3 | 58.456  | GKS09-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 2.2                 | 9.1                 | - | 53               | 893              | 1275          | 2.0 | 65.879  | GKS09-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 2.1                 | 8.5                 | - | 50               | 962              | 1374          | 1.9 | 70.982  | GKS09-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 1.8                 | 7.5                 | - | 44               | 1084             | 1548          | 1.7 | 79.996  | GKS09-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 1.6                 | 6.5                 | - | 38               | 1245             | 1778          | 1.5 | 91.860  | GKS09-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 1.6                 | 6.5                 | - | 38               | 1243             | 1776          | 2.1 | 91.737  | GKS11-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 1.5                 | 6.0                 | - | 35               | 1339             | 1913          | 1.4 | 100.551 | GKS09-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 1.4                 | 5.8                 | - | 34               | 1403             | 2004          | 1.3 | 103.524 | GKS09-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 1.4                 | 5.8                 | - | 34               | 1401             | 2001          | 2.1 | 103.365 | GKS11-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 1.4                 | 5.9                 | - | 34               | 1360             | 1943          | 2.5 | 102.119 | GKS11-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 1.3                 | 5.4                 | - | 32               | 1511             | 2158          | 1.3 | 111.484 | GKS09-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 1.3                 | 5.4                 | - | 32               | 1508             | 2155          | 2.0 | 111.335 | GKS11-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 1.3                 | 5.3                 | - | 31               | 1509             | 2156          | 1.3 | 113.320 | GKS09-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 1.3                 | 5.2                 | - | 31               | 1533             | 2189          | 2.5 | 115.063 | GKS11-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 1.2                 | 4.9                 | - | 29               | 1642             | 2346          | 1.2 | 123.275 | GKS09-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 1.2                 | 4.8                 | - | 28               | 1702             | 2432          | 1.2 | 125.641 | GKS09-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 1.2                 | 4.8                 | - | 28               | 1700             | 2428          | 2.0 | 125.448 | GKS11-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 1.2                 | 4.8                 | - | 28               | 1666             | 2380          | 2.3 | 125.095 | GKS11-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 1.0                 | 4.3                 | - | 25               | 1909             | 2728          | 1.0 | 140.921 | GKS09-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 1.1                 | 4.3                 | - | 25               | 1850             | 2643          | 1.1 | 138.929 | GKS09-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 1.0                 | 4.3                 | - | 25               | 1907             | 2724          | 1.6 | 140.732 | GKS11-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 1.0                 | 4.3                 | - | 25               | 1877             | 2682          | 2.1 | 140.952 | GKS11-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 1.0                 | 4.0                 | - | 23               | 2011             | 2873          | 1.0 | 151.012 | GKS09-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 1.0                 | 3.9                 | - | 23               | 2041             | 2916          | 1.9 | 153.242 | GKS11-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 0.9                 | 3.8                 | - | 22               | 2152             | 3074          | 1.0 | 158.816 | GKS09-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 0.9                 | 3.8                 | - | 22               | 2148             | 3069          | 1.6 | 158.571 | GKS11-3M□□□100C32 | E84AV□□□7524□□□ | 292 |



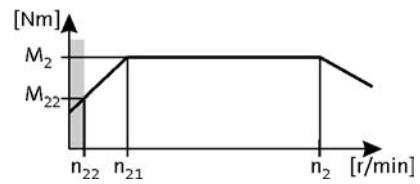
# GKS

GKS [Nm] - MF□MA

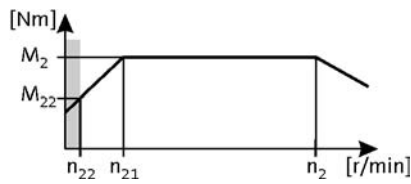
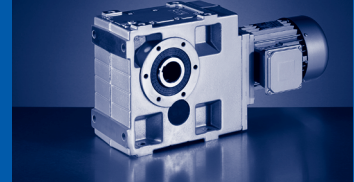
120 Hz:  $P_N = 7.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 146.5 \dots 3515 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 0.9      | 3.5      | - | 20      | 2300     | 3285  | 1.7 | 172.667 | GKS11-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 0.8      | 3.4      | - | 20      | 2372     | 3388  | 3.2 | 178.072 | GKS14-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 0.8      | 3.2      | - | 19      | 2528     | 3611  | 1.6 | 186.572 | GKS11-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 0.7      | 2.9      | - | 17      | 2848     | 4069  | 1.4 | 210.222 | GKS11-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 0.7      | 3.0      | - | 17      | 2689     | 3841  | 1.5 | 201.890 | GKS11-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 0.7      | 2.7      | - | 16      | 3068     | 4383  | 1.3 | 226.431 | GKS11-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 0.6      | 2.6      | - | 16      | 3030     | 4328  | 1.3 | 227.481 | GKS11-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 0.6      | 2.4      | - | 14      | 3457     | 4938  | 1.1 | 255.133 | GKS11-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 0.6      | 2.4      | - | 14      | 3304     | 4721  | 1.2 | 248.106 | GKS11-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 0.5      | 2.2      | - | 13      | 3723     | 5319  | 1.1 | 279.556 | GKS11-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 0.5      | 2.1      | - | 12      | 3878     | 5540  | 1.0 | 286.219 | GKS11-3M□□□100C32 | E84AV□□□7524□□□ | 292 |
| 0.5      | 1.9      | - | 11      | 4301     | 6144  | 0.9 | 322.931 | GKS11-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 0.5      | 1.9      | - | 11      | 4285     | 6121  | 1.8 | 321.729 | GKS14-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 0.4      | 1.7      | - | 9.7     | 4828     | 6897  | 1.6 | 362.512 | GKS14-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 0.4      | 1.5      | - | 9.0     | 5203     | 7433  | 1.5 | 390.671 | GKS14-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 0.3      | 1.4      | - | 8.0     | 5863     | 8375  | 1.3 | 440.193 | GKS14-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 0.3      | 1.2      | - | 6.9     | 6834     | 9763  | 1.1 | 513.121 | GKS14-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 0.3      | 1.0      | - | 6.1     | 7700     | 11000 | 1.0 | 578.164 | GKS14-4M□□□100C32 | E84AV□□□7524□□□ | 300 |
| 0.2      | 1.0      | - | 5.6     | 8294     | 11848 | 0.9 | 622.742 | GKS14-4M□□□100C32 | E84AV□□□7524□□□ | 300 |

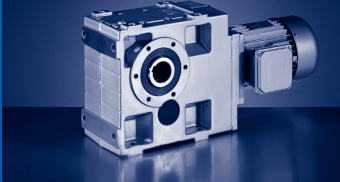


120 Hz:  $P_N = 11.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 147.1 \dots 3530 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i       |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|---------|-------------------|-----------------|-----|
| 13                  | 53                  | - | 310              | 206              | 322           | 1.4 | 11.378  | GKS07-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 9.1                 | 37                  | - | 219              | 292              | 456           | 3.0 | 16.122  | GKS09-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 8.5                 | 35                  | - | 204              | 312              | 488           | 1.5 | 17.270  | GKS07-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 8.4                 | 34                  | - | 201              | 317              | 496           | 3.0 | 17.536  | GKS09-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 5.8                 | 24                  | - | 140              | 457              | 714           | 1.2 | 25.244  | GKS07-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 5.7                 | 23                  | - | 138              | 464              | 725           | 3.0 | 25.649  | GKS09-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 5.2                 | 21                  | - | 125              | 512              | 799           | 1.1 | 28.274  | GKS07-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 5.0                 | 21                  | - | 121              | 529              | 826           | 2.7 | 29.228  | GKS09-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 4.6                 | 19                  | - | 111              | 576              | 901           | 1.0 | 31.858  | GKS07-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 4.5                 | 18                  | - | 107              | 596              | 931           | 2.4 | 32.940  | GKS09-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 4.2                 | 17                  | - | 100              | 637              | 995           | 2.3 | 35.193  | GKS09-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 4.1                 | 17                  | - | 99               | 647              | 1010          | 3.1 | 35.741  | GKS11-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 4.1                 | 17                  | - | 98               | 652              | 1019          | 1.0 | 36.063  | GKS07-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 3.7                 | 15                  | - | 89               | 718              | 1121          | 2.0 | 39.662  | GKS09-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 3.7                 | 15                  | - | 88               | 729              | 1138          | 3.1 | 40.272  | GKS11-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 3.4                 | 14                  | - | 82               | 781              | 1220          | 2.1 | 43.146  | GKS09-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 3.0                 | 12                  | - | 73               | 880              | 1375          | 1.9 | 48.625  | GKS09-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 2.6                 | 10                  | - | 61               | 1044             | 1631          | 2.5 | 57.683  | GKS11-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 2.5                 | 10                  | - | 60               | 1058             | 1652          | 1.6 | 58.456  | GKS09-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 2.2                 | 9.1                 | - | 54               | 1192             | 1862          | 1.4 | 65.879  | GKS09-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 2.3                 | 9.2                 | - | 54               | 1176             | 1837          | 2.5 | 64.995  | GKS11-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 2.1                 | 8.5                 | - | 50               | 1284             | 2007          | 1.3 | 70.982  | GKS09-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 2.1                 | 8.5                 | - | 50               | 1282             | 2004          | 2.1 | 70.887  | GKS11-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 1.8                 | 7.5                 | - | 44               | 1447             | 2261          | 1.2 | 79.996  | GKS09-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 1.8                 | 7.5                 | - | 44               | 1445             | 2258          | 2.1 | 79.873  | GKS11-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 1.6                 | 6.5                 | - | 39               | 1660             | 2593          | 1.6 | 91.737  | GKS11-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 1.6                 | 6.6                 | - | 39               | 1638             | 2560          | 2.0 | 90.551  | GKS14-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 1.6                 | 6.5                 | - | 38               | 1662             | 2597          | 1.0 | 91.860  | GKS09-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 1.5                 | 6.2                 | - | 36               | 1733             | 2708          | 2.9 | 97.467  | GKS14-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 1.5                 | 6.0                 | - | 35               | 1788             | 2794          | 0.9 | 100.551 | GKS09-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 1.4                 | 5.9                 | - | 35               | 1816             | 2838          | 1.7 | 102.119 | GKS11-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 1.4                 | 5.9                 | - | 35               | 1846             | 2884          | 2.0 | 102.029 | GKS14-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 1.4                 | 5.8                 | - | 34               | 1870             | 2922          | 1.6 | 103.365 | GKS11-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 1.3                 | 5.4                 | - | 32               | 2017             | 3151          | 0.9 | 111.484 | GKS09-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 1.3                 | 5.4                 | - | 32               | 2014             | 3147          | 1.5 | 111.335 | GKS11-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 1.3                 | 5.5                 | - | 32               | 1988             | 3106          | 1.7 | 109.896 | GKS14-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 1.3                 | 5.5                 | - | 32               | 1953             | 3052          | 2.9 | 109.822 | GKS14-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 1.3                 | 5.3                 | - | 31               | 2015             | 3149          | 0.9 | 113.320 | GKS09-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 1.3                 | 5.2                 | - | 31               | 2046             | 3197          | 1.7 | 115.063 | GKS11-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 1.2                 | 5.0                 | - | 30               | 2125             | 3320          | 3.1 | 119.493 | GKS14-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 1.2                 | 4.9                 | - | 29               | 2240             | 3500          | 1.9 | 123.826 | GKS14-3M□□□112C22 | E84AV□□□1134□□□ | 292 |



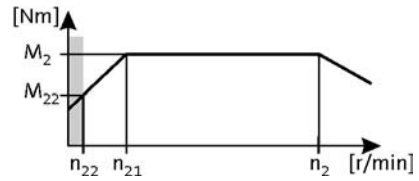
# GKS

## GKS [Nm] - MF□MA

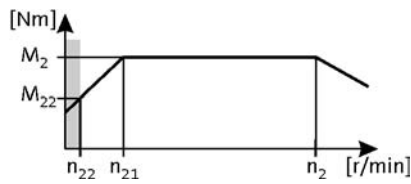
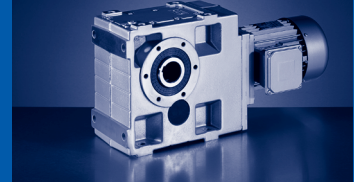
120 Hz:  $P_N = 11.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 147.1 \dots 3530 \text{ r/min}$




| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 1.2      | 4.8      | - | 28      | 2270     | 3546  | 1.5 | 125.448 | GKS11-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 1.2      | 4.8      | - | 28      | 2225     | 3476  | 1.6 | 125.095 | GKS11-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 1.1      | 4.5      | - | 26      | 2394     | 3741  | 2.9 | 134.640 | GKS14-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 1.1      | 4.3      | - | 25      | 2546     | 3978  | 1.2 | 140.732 | GKS11-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 1.0      | 4.3      | - | 25      | 2507     | 3917  | 1.4 | 140.952 | GKS11-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 1.1      | 4.3      | - | 25      | 2513     | 3927  | 1.5 | 138.913 | GKS14-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 1.0      | 3.9      | - | 23      | 2725     | 4258  | 1.3 | 153.242 | GKS11-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 0.9      | 3.8      | - | 23      | 2832     | 4424  | 1.5 | 156.522 | GKS14-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 0.9      | 3.8      | - | 22      | 2869     | 4482  | 1.2 | 158.571 | GKS11-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 0.9      | 3.8      | - | 22      | 2811     | 4391  | 2.5 | 158.039 | GKS14-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 0.9      | 3.5      | - | 20      | 3071     | 4798  | 1.2 | 172.667 | GKS11-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 0.8      | 3.4      | - | 20      | 3167     | 4948  | 2.2 | 178.072 | GKS14-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 0.8      | 3.2      | - | 19      | 3375     | 5274  | 1.1 | 186.572 | GKS11-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 0.8      | 3.2      | - | 19      | 3375     | 5274  | 2.1 | 186.572 | GKS14-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 0.7      | 3.0      | - | 18      | 3590     | 5610  | 1.0 | 201.890 | GKS11-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 0.8      | 3.1      | - | 18      | 3446     | 5384  | 2.0 | 193.754 | GKS14-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 0.7      | 2.9      | - | 17      | 3803     | 5942  | 0.9 | 210.222 | GKS11-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 0.7      | 2.9      | - | 17      | 3803     | 5942  | 1.8 | 210.222 | GKS14-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 0.7      | 2.7      | - | 16      | 4096     | 6401  | 1.7 | 226.431 | GKS14-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 0.7      | 2.8      | - | 16      | 3882     | 6066  | 1.8 | 218.315 | GKS14-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 0.6      | 2.5      | - | 15      | 4223     | 6598  | 1.6 | 237.467 | GKS14-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 0.6      | 2.4      | - | 14      | 4616     | 7212  | 1.5 | 255.133 | GKS14-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 0.6      | 2.2      | - | 13      | 4758     | 7435  | 1.5 | 267.568 | GKS14-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 0.5      | 2.1      | - | 12      | 5178     | 8091  | 1.4 | 286.219 | GKS14-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 0.5      | 1.9      | - | 11      | 5722     | 8940  | 1.2 | 321.729 | GKS14-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 0.5      | 1.9      | - | 11      | 5834     | 9116  | 1.2 | 322.500 | GKS14-3M□□□112C22 | E84AV□□□1134□□□ | 292 |
| 0.4      | 1.7      | - | 9.7     | 6447     | 10073 | 1.1 | 362.512 | GKS14-4M□□□112C22 | E84AV□□□1134□□□ | 300 |
| 0.4      | 1.5      | - | 9.0     | 6948     | 10855 | 1.0 | 390.671 | GKS14-4M□□□112C22 | E84AV□□□1134□□□ | 300 |

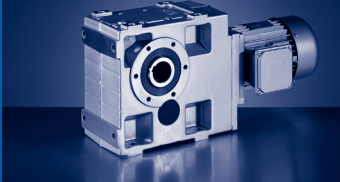


120 Hz:  $P_N = 15.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 148.3 \dots 3560 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |   |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|---|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |  |
| 13       | 53       | - | 313     | 278      | 435   | 1.1 | 11.378  | GKS07-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 9.2      | 37       | - | 221     | 394      | 616   | 2.2 | 16.122  | GKS09-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 8.6      | 35       | - | 206     | 422      | 660   | 1.1 | 17.270  | GKS07-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 8.5      | 34       | - | 203     | 429      | 670   | 2.2 | 17.536  | GKS09-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 5.9      | 24       | - | 141     | 618      | 965   | 0.9 | 25.244  | GKS07-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 5.8      | 23       | - | 139     | 627      | 980   | 2.2 | 25.649  | GKS09-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 5.1      | 21       | - | 122     | 715      | 1117  | 2.0 | 29.228  | GKS09-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 4.5      | 18       | - | 108     | 806      | 1259  | 1.8 | 32.940  | GKS09-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 4.2      | 17       | - | 101     | 861      | 1345  | 1.7 | 35.193  | GKS09-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 4.2      | 17       | - | 100     | 874      | 1366  | 3.1 | 35.741  | GKS11-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 3.7      | 15       | - | 90      | 970      | 1516  | 1.5 | 39.662  | GKS09-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 3.7      | 15       | - | 88      | 985      | 1539  | 2.9 | 40.272  | GKS11-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 3.4      | 14       | - | 83      | 1055     | 1649  | 1.6 | 43.146  | GKS09-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 3.4      | 14       | - | 81      | 1071     | 1674  | 3.0 | 43.783  | GKS11-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 3.1      | 12       | - | 73      | 1189     | 1859  | 1.4 | 48.625  | GKS09-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 3.0      | 12       | - | 72      | 1207     | 1886  | 2.7 | 49.333  | GKS11-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 2.6      | 10       | - | 62      | 1411     | 2205  | 2.3 | 57.683  | GKS11-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 2.5      | 10       | - | 61      | 1430     | 2234  | 1.2 | 58.456  | GKS09-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 2.3      | 9.2      | - | 55      | 1590     | 2484  | 2.1 | 64.995  | GKS11-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 2.3      | 9.1      | - | 54      | 1612     | 2518  | 1.0 | 65.879  | GKS09-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 2.1      | 8.5      | - | 50      | 1736     | 2713  | 1.0 | 70.982  | GKS09-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 2.1      | 8.5      | - | 50      | 1734     | 2709  | 1.9 | 70.887  | GKS11-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 1.9      | 7.5      | - | 45      | 1954     | 3053  | 1.7 | 79.873  | GKS11-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 1.6      | 6.5      | - | 39      | 2244     | 3506  | 1.5 | 91.737  | GKS11-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 1.6      | 6.6      | - | 39      | 2215     | 3461  | 2.8 | 90.551  | GKS14-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 1.5      | 6.2      | - | 37      | 2344     | 3662  | 2.3 | 97.467  | GKS14-4M□□□132C12 | E84AV□□□1534□□□ | 300   |
| 1.5      | 5.9      | - | 35      | 2456     | 3837  | 1.3 | 102.119 | GKS11-4M□□□132C12 | E84AV□□□1534□□□ | 300   |
| 1.5      | 5.9      | - | 35      | 2496     | 3900  | 2.5 | 102.029 | GKS14-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 1.4      | 5.8      | - | 34      | 2529     | 3951  | 1.3 | 103.365 | GKS11-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 1.3      | 5.4      | - | 32      | 2723     | 4255  | 1.3 | 111.335 | GKS11-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 1.4      | 5.5      | - | 32      | 2641     | 4126  | 2.3 | 109.822 | GKS14-4M□□□132C12 | E84AV□□□1534□□□ | 300   |
| 1.4      | 5.5      | - | 32      | 2688     | 4200  | 2.4 | 109.896 | GKS14-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 1.3      | 5.2      | - | 31      | 2767     | 4323  | 1.3 | 115.063 | GKS11-4M□□□132C12 | E84AV□□□1534□□□ | 300   |
| 1.2      | 5.0      | - | 30      | 2873     | 4490  | 2.3 | 119.493 | GKS14-4M□□□132C12 | E84AV□□□1534□□□ | 300   |
| 1.2      | 4.8      | - | 29      | 3008     | 4700  | 1.2 | 125.095 | GKS11-4M□□□132C12 | E84AV□□□1534□□□ | 300   |
| 1.2      | 4.9      | - | 29      | 3029     | 4733  | 2.3 | 123.826 | GKS14-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 1.2      | 4.8      | - | 28      | 3069     | 4795  | 1.2 | 125.448 | GKS11-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 1.1      | 4.3      | - | 26      | 3398     | 5309  | 2.1 | 138.913 | GKS14-3M□□□132C12 | E84AV□□□1534□□□ | 292   |
| 1.1      | 4.5      | - | 26      | 3238     | 5059  | 2.1 | 134.640 | GKS14-4M□□□132C12 | E84AV□□□1534□□□ | 300   |
| 1.1      | 4.3      | - | 25      | 3389     | 5296  | 1.1 | 140.952 | GKS11-4M□□□132C12 | E84AV□□□1534□□□ | 300   |
| 1.0      | 3.9      | - | 23      | 3685     | 5758  | 1.0 | 153.242 | GKS11-4M□□□132C12 | E84AV□□□1534□□□ | 300   |



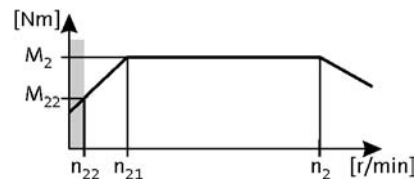
# GKS

GKS [Nm] - MF□MA

120 Hz:  $P_N = 15.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

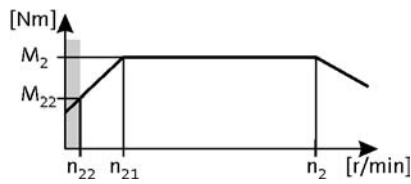
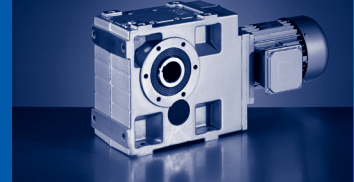
$n_1 = 148.3 \dots 3560 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 1.0      | 3.8      | - | 23      | 3829     | 5983  | 1.8 | 156.522 | GKS14-3M□□□132C12 | E84AV□□□1534□□□ | 292 |
| 0.9      | 3.8      | - | 23      | 3800     | 5938  | 1.8 | 158.039 | GKS14-4M□□□132C12 | E84AV□□□1534□□□ | 300 |
| 0.8      | 3.4      | - | 20      | 4282     | 6690  | 1.6 | 178.072 | GKS14-4M□□□132C12 | E84AV□□□1534□□□ | 300 |
| 0.8      | 3.2      | - | 19      | 4564     | 7131  | 1.5 | 186.572 | GKS14-3M□□□132C12 | E84AV□□□1534□□□ | 292 |
| 0.8      | 3.1      | - | 18      | 4659     | 7280  | 1.5 | 193.754 | GKS14-4M□□□132C12 | E84AV□□□1534□□□ | 300 |
| 0.7      | 2.9      | - | 17      | 5142     | 8035  | 1.4 | 210.222 | GKS14-3M□□□132C12 | E84AV□□□1534□□□ | 292 |
| 0.7      | 2.7      | - | 16      | 5539     | 8655  | 1.3 | 226.431 | GKS14-3M□□□132C12 | E84AV□□□1534□□□ | 292 |
| 0.7      | 2.8      | - | 16      | 5250     | 8202  | 1.3 | 218.315 | GKS14-4M□□□132C12 | E84AV□□□1534□□□ | 300 |
| 0.6      | 2.5      | - | 15      | 5710     | 8922  | 1.2 | 237.467 | GKS14-4M□□□132C12 | E84AV□□□1534□□□ | 300 |
| 0.6      | 2.4      | - | 14      | 6241     | 9752  | 1.1 | 255.133 | GKS14-3M□□□132C12 | E84AV□□□1534□□□ | 292 |
| 0.6      | 2.2      | - | 13      | 6434     | 10053 | 1.1 | 267.568 | GKS14-4M□□□132C12 | E84AV□□□1534□□□ | 300 |
| 0.5      | 2.1      | - | 12      | 7001     | 10940 | 1.0 | 286.219 | GKS14-3M□□□132C12 | E84AV□□□1534□□□ | 292 |





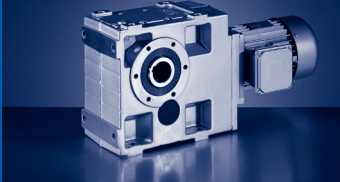


120 Hz:  $P_N = 18.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 148.3 \dots 3560 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c    | i   |         |                   |                 |     |
|---------------------|---------------------|------------------|------------------|---------------|------|-----|---------|-------------------|-----------------|-----|
| 9.2                 | 37                  | -                | 221              | 486           | 760  | 1.8 | 16.122  | GKS09-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 8.6                 | 35                  | -                | 206              | 521           | 814  | 0.9 | 17.270  | GKS07-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 8.5                 | 34                  | -                | 203              | 529           | 827  | 1.8 | 17.536  | GKS09-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 5.8                 | 23                  | -                | 139              | 774           | 1209 | 1.8 | 25.649  | GKS09-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 5.3                 | 21                  | -                | 127              | 845           | 1321 | 2.9 | 28.021  | GKS11-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 5.1                 | 21                  | -                | 122              | 882           | 1378 | 1.6 | 29.228  | GKS09-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 4.7                 | 19                  | -                | 113              | 953           | 1488 | 2.8 | 31.573  | GKS11-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 4.5                 | 18                  | -                | 108              | 994           | 1553 | 1.4 | 32.940  | GKS09-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 4.2                 | 17                  | -                | 101              | 1062          | 1659 | 1.4 | 35.193  | GKS09-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 4.2                 | 17                  | -                | 100              | 1078          | 1685 | 2.5 | 35.741  | GKS11-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 3.7                 | 15                  | -                | 90               | 1197          | 1870 | 1.2 | 39.662  | GKS09-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 3.7                 | 15                  | -                | 88               | 1215          | 1898 | 2.3 | 40.272  | GKS11-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 3.4                 | 14                  | -                | 83               | 1302          | 2034 | 1.3 | 43.146  | GKS09-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 3.4                 | 14                  | -                | 81               | 1321          | 2064 | 2.4 | 43.783  | GKS11-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 3.1                 | 12                  | -                | 73               | 1467          | 2292 | 1.1 | 48.625  | GKS09-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 3.0                 | 12                  | -                | 72               | 1488          | 2326 | 2.2 | 49.333  | GKS11-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 2.6                 | 10                  | -                | 62               | 1740          | 2719 | 1.9 | 57.683  | GKS11-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 2.5                 | 10                  | -                | 61               | 1764          | 2756 | 0.9 | 58.456  | GKS09-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 2.3                 | 9.2                 | -                | 55               | 1961          | 3064 | 1.7 | 64.995  | GKS11-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 2.2                 | 8.7                 | -                | 52               | 2080          | 3250 | 3.0 | 68.942  | GKS14-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 2.1                 | 8.5                 | -                | 50               | 2139          | 3342 | 1.5 | 70.887  | GKS11-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 1.9                 | 7.7                 | -                | 46               | 2344          | 3662 | 2.7 | 77.681  | GKS14-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 1.9                 | 7.5                 | -                | 45               | 2410          | 3765 | 1.4 | 79.873  | GKS11-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 1.6                 | 6.5                 | -                | 39               | 2768          | 4324 | 1.2 | 91.737  | GKS11-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 1.6                 | 6.6                 | -                | 39               | 2732          | 4269 | 2.3 | 90.551  | GKS14-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 1.5                 | 6.2                 | -                | 37               | 2891          | 4516 | 1.9 | 97.467  | GKS14-4M□□□132C22 | E84AV□□□1834□□□ | 300 |
| 1.5                 | 5.9                 | -                | 35               | 3029          | 4732 | 1.0 | 102.119 | GKS11-4M□□□132C22 | E84AV□□□1834□□□ | 300 |
| 1.5                 | 5.9                 | -                | 35               | 3078          | 4810 | 2.1 | 102.029 | GKS14-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 1.4                 | 5.8                 | -                | 34               | 3119          | 4873 | 1.1 | 103.365 | GKS11-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 1.3                 | 5.4                 | -                | 32               | 3359          | 5248 | 1.1 | 111.335 | GKS11-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 1.4                 | 5.5                 | -                | 32               | 3257          | 5089 | 1.8 | 109.822 | GKS14-4M□□□132C22 | E84AV□□□1834□□□ | 300 |
| 1.4                 | 5.5                 | -                | 32               | 3316          | 5180 | 1.9 | 109.896 | GKS14-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 1.3                 | 5.2                 | -                | 31               | 3412          | 5332 | 1.0 | 115.063 | GKS11-4M□□□132C22 | E84AV□□□1834□□□ | 300 |
| 1.2                 | 5.0                 | -                | 30               | 3544          | 5537 | 1.8 | 119.493 | GKS14-4M□□□132C22 | E84AV□□□1834□□□ | 300 |
| 1.2                 | 4.8                 | -                | 29               | 3710          | 5797 | 0.9 | 125.095 | GKS11-4M□□□132C22 | E84AV□□□1834□□□ | 300 |
| 1.2                 | 4.9                 | -                | 29               | 3736          | 5837 | 1.9 | 123.826 | GKS14-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 1.2                 | 4.8                 | -                | 28               | 3785          | 5914 | 1.0 | 125.448 | GKS11-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 1.1                 | 4.5                 | -                | 26               | 3993          | 6239 | 1.7 | 134.640 | GKS14-4M□□□132C22 | E84AV□□□1834□□□ | 300 |
| 1.1                 | 4.3                 | -                | 26               | 4191          | 6548 | 1.7 | 138.913 | GKS14-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 0.9                 | 3.8                 | -                | 23               | 4687          | 7323 | 1.5 | 158.039 | GKS14-4M□□□132C22 | E84AV□□□1834□□□ | 300 |
| 1.0                 | 3.8                 | -                | 23               | 4722          | 7378 | 1.5 | 156.522 | GKS14-3M□□□132C22 | E84AV□□□1834□□□ | 292 |



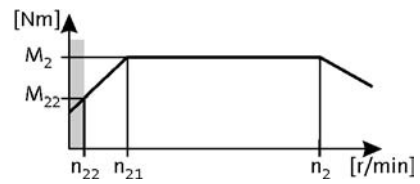
# GKS

## GKS [Nm] - MF□MA

120 Hz:  $P_N = 18.50 \text{ kW}$

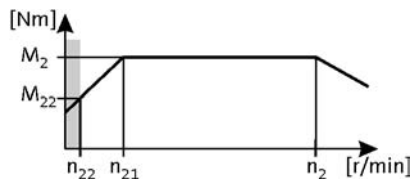
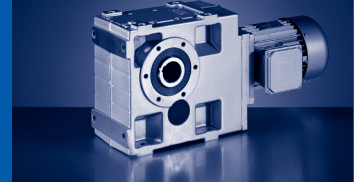
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 148.3 \dots 3560 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 0.8      | 3.4      | - | 20      | 5281     | 8252  | 1.3 | 178.072 | GKS14-4M□□□132C22 | E84AV□□□1834□□□ | 300 |
| 0.8      | 3.2      | - | 19      | 5629     | 8795  | 1.2 | 186.572 | GKS14-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 0.8      | 3.1      | - | 18      | 5746     | 8978  | 1.2 | 193.754 | GKS14-4M□□□132C22 | E84AV□□□1834□□□ | 300 |
| 0.7      | 2.9      | - | 17      | 6342     | 9910  | 1.1 | 210.222 | GKS14-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 0.7      | 2.7      | - | 16      | 6831     | 10674 | 1.0 | 226.431 | GKS14-3M□□□132C22 | E84AV□□□1834□□□ | 292 |
| 0.7      | 2.8      | - | 16      | 6474     | 10116 | 1.1 | 218.315 | GKS14-4M□□□132C22 | E84AV□□□1834□□□ | 300 |
| 0.6      | 2.5      | - | 15      | 7042     | 11004 | 1.0 | 237.467 | GKS14-4M□□□132C22 | E84AV□□□1834□□□ | 300 |
| 0.6      | 2.4      | - | 14      | 7697     | 12027 | 0.9 | 255.133 | GKS14-3M□□□132C22 | E84AV□□□1834□□□ | 292 |



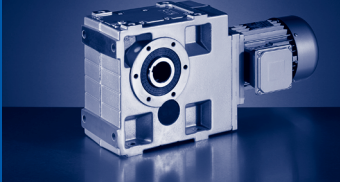


120 Hz:  $P_N = 22.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

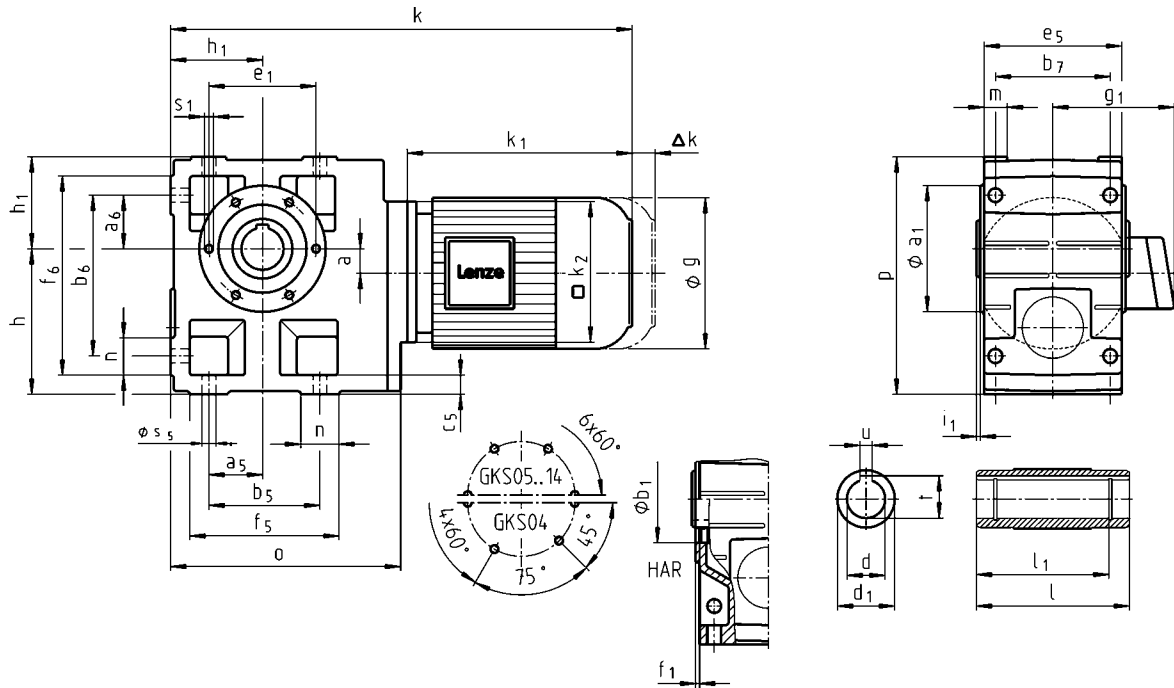
$n_1 = 147.9 \dots 3550 \text{ r/min}$

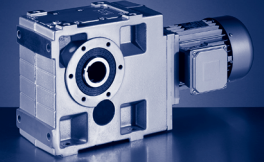
| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i       |                   |                 |     |  |
|---------------------|---------------------|------------------|------------------|---------------|-----|---------|-------------------|-----------------|-----|--|
| 9.2                 | 37                  | -                | 220              | 580           | 1.5 | 16.122  | GKS09-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 8.4                 | 34                  | -                | 202              | 631           | 1.5 | 17.536  | GKS09-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 5.8                 | 23                  | -                | 138              | 923           | 1.5 | 25.649  | GKS09-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 5.3                 | 21                  | -                | 127              | 1008          | 2.5 | 28.021  | GKS11-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 5.1                 | 21                  | -                | 122              | 1052          | 1.3 | 29.228  | GKS09-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 4.7                 | 19                  | -                | 112              | 1136          | 2.3 | 31.573  | GKS11-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 4.5                 | 18                  | -                | 108              | 1185          | 1.2 | 32.940  | GKS09-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 4.2                 | 17                  | -                | 101              | 1266          | 1.1 | 35.193  | GKS09-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 4.1                 | 17                  | -                | 99               | 1286          | 2.1 | 35.741  | GKS11-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 3.7                 | 15                  | -                | 90               | 1427          | 1.0 | 39.662  | GKS09-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 3.7                 | 15                  | -                | 88               | 1449          | 1.9 | 40.272  | GKS11-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 3.4                 | 14                  | -                | 82               | 1552          | 1.1 | 43.146  | GKS09-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 3.4                 | 14                  | -                | 81               | 1575          | 2.0 | 43.783  | GKS11-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 3.0                 | 12                  | -                | 73               | 1749          | 0.9 | 48.625  | GKS09-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 3.0                 | 12                  | -                | 72               | 1775          | 1.8 | 49.333  | GKS11-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 2.6                 | 11                  | -                | 63               | 2024          | 2.9 | 56.251  | GKS14-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 2.6                 | 10                  | -                | 62               | 2075          | 1.6 | 57.683  | GKS11-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 2.3                 | 9.5                 | -                | 56               | 2280          | 2.7 | 63.382  | GKS14-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 2.3                 | 9.2                 | -                | 55               | 2338          | 1.4 | 64.995  | GKS11-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 2.2                 | 8.7                 | -                | 52               | 2480          | 2.5 | 68.942  | GKS14-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 2.1                 | 8.5                 | -                | 50               | 2550          | 1.3 | 70.887  | GKS11-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 1.9                 | 7.7                 | -                | 46               | 2795          | 2.2 | 77.681  | GKS14-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 1.9                 | 7.5                 | -                | 44               | 2874          | 1.1 | 79.873  | GKS11-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 1.6                 | 6.5                 | -                | 39               | 3301          | 1.0 | 91.737  | GKS11-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 1.6                 | 6.6                 | -                | 39               | 3258          | 1.9 | 90.551  | GKS14-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 1.5                 | 6.2                 | -                | 36               | 3447          | 1.6 | 97.467  | GKS14-4M□□□132C32 | E84AV□□□2234□□□ | 300 |  |
| 1.5                 | 5.9                 | -                | 35               | 3671          | 1.7 | 102.029 | GKS14-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 1.3                 | 5.4                 | -                | 32               | 4006          | 0.9 | 111.335 | GKS11-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 1.4                 | 5.5                 | -                | 32               | 3884          | 1.5 | 109.822 | GKS14-4M□□□132C32 | E84AV□□□2234□□□ | 300 |  |
| 1.4                 | 5.5                 | -                | 32               | 3954          | 1.6 | 109.896 | GKS14-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 1.2                 | 5.0                 | -                | 30               | 4226          | 1.5 | 119.493 | GKS14-4M□□□132C32 | E84AV□□□2234□□□ | 300 |  |
| 1.2                 | 4.9                 | -                | 29               | 4455          | 1.6 | 123.826 | GKS14-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 1.1                 | 4.5                 | -                | 26               | 4762          | 1.4 | 134.640 | GKS14-4M□□□132C32 | E84AV□□□2234□□□ | 300 |  |
| 1.1                 | 4.3                 | -                | 26               | 4998          | 1.4 | 138.913 | GKS14-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 0.9                 | 3.8                 | -                | 23               | 5589          | 1.2 | 158.039 | GKS14-4M□□□132C32 | E84AV□□□2234□□□ | 300 |  |
| 1.0                 | 3.8                 | -                | 23               | 5631          | 1.3 | 156.522 | GKS14-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 0.8                 | 3.4                 | -                | 20               | 6298          | 1.1 | 178.072 | GKS14-4M□□□132C32 | E84AV□□□2234□□□ | 300 |  |
| 0.8                 | 3.2                 | -                | 19               | 6713          | 1.0 | 186.572 | GKS14-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |
| 0.8                 | 3.1                 | -                | 18               | 6852          | 1.0 | 193.754 | GKS14-4M□□□132C32 | E84AV□□□2234□□□ | 300 |  |
| 0.7                 | 2.9                 | -                | 17               | 7563          | 0.9 | 210.222 | GKS14-3M□□□132C32 | E84AV□□□2234□□□ | 292 |  |



**GKS**  
GKS [mm] - MF□MA

**GKS□□-3M H□R**





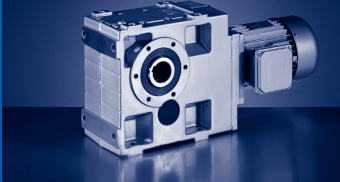
|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|----------------------|---------|------------------|------------------|------------------|--------|------------------|--------|------------------|--------|
| <b>g</b>             |         | 123              | 139              | 156              | 176    | 194              | 218    |                  | 258    |
| <b>B<sub>1</sub></b> | MFEMAXX | 100              | 109              | 141              | 146    | 157              | 167    |                  | 195    |
|                      | MFEMABR | 107              | 118              | 132              | 137    | 147              | 158    |                  | 187    |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              | 224.5            | 274    | 324              | 363    |                  | 403    |
| <b>k<sub>2</sub></b> |         | 120              |                  | 145              |        | 180              |        | 222              | 265    |
|                      | MFEMABR | 40               | 52               | 73               | 68     | 76               | 90     |                  | 109.5  |
| <b>Δ k</b>           | MFEMAXX |                  |                  | 128              |        | 109              | 102    |                  | 115    |
|                      | MFEMABR | 170              | 165              | 183              | 181    | 170              | 183    |                  | 201.5  |
| <b>k</b>             |         |                  |                  |                  |        |                  |        |                  |        |
| <b>GKS04</b>         |         | 399              | 419              | 441              |        |                  |        |                  |        |
| <b>GKS05</b>         |         | 419              | 439              | 461              | 521    |                  |        |                  |        |
| <b>GKS06</b>         |         | 475              | 495              | 517              | 577    | 627              |        |                  |        |
| <b>GKS07</b>         |         |                  |                  | 573              | 633    | 683              | 728    | 776              |        |
| <b>GKS09</b>         |         |                  |                  |                  | 704    | 754              | 799    |                  | 847    |
| <b>GKS11</b>         |         |                  |                  |                  |        | 845              | 890    |                  | 938    |
| <b>GKS14</b>         |         |                  |                  |                  |        |                  | 989    |                  | 1037   |

|              | a  | h <sup>1)</sup> | h <sub>1</sub> | o   | p <sup>1)</sup> |
|--------------|----|-----------------|----------------|-----|-----------------|
| <b>GKS04</b> | 20 | 100             | 71             | 203 | 171             |
| <b>GKS05</b> | 23 | 125             | 80             | 232 | 205             |
| <b>GKS06</b> | 28 | 150             | 100            | 291 | 250             |
| <b>GKS07</b> | 34 | 190             | 120            | 354 | 310             |
| <b>GKS09</b> | 41 | 236             | 150            | 429 | 386             |
| <b>GKS11</b> | 54 | 300             | 185            | 527 | 485             |
| <b>GKS14</b> | 67 | 375             | 230            | 636 | 605             |

|              | d   | d <sub>1</sub> | l <sup>1)</sup> | l <sub>1</sub> | u   | t     | i <sub>1</sub> | a <sub>1</sub> | b <sub>1</sub> | e <sub>1</sub> | f <sub>1</sub> | s <sub>1</sub> |
|--------------|-----|----------------|-----------------|----------------|-----|-------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | H7  |                |                 |                | JS9 | +0,2  |                |                | H7             |                |                |                |
| <b>GKS04</b> | 25  | 45             | 115             | 100            | 8   | 28.3  | 2.5            | 104            | 75             | 90             | 3              | M6x12          |
|              | 30  | 45             | 115             | 100            | 8   | 33.3  | 2.5            |                |                |                |                |                |
| <b>GKS05</b> | 30  | 50             | 140             | 124            | 8   | 33.3  | 4              | 118            | 80             | 100            | 4              | M8x15          |
|              | 35  | 50             | 140             | 124            | 10  | 38.3  | 4              |                |                |                |                |                |
| <b>GKS06</b> | 40  | 65             | 160             | 140            | 12  | 43.3  | 5              | 140            | 100            | 120            | 4              | M10x16         |
|              | 45  | 65             | 160             | 140            | 14  | 48.8  | 5              |                |                |                |                |                |
| <b>GKS07</b> | 50  | 75             | 200             | 175            | 14  | 53.8  | 5              | 165            | 115            | 140            | 5              | M12x18         |
|              | 55  | 75             | 200             | 175            | 16  | 59.3  | 5              |                |                |                |                |                |
| <b>GKS09</b> | 60  | 95             | 240             | 210            | 18  | 64.4  | 5              | 205            | 145            | 175            | 6              | M16x24         |
|              | 70  | 95             | 240             | 210            | 20  | 74.9  | 5              |                |                |                |                |                |
| <b>GKS11</b> | 70  | 105            | 290             | 250            | 20  | 74.9  | 6              | 240            | 140            | 205            | 6              | M20x32         |
|              | 80  | 105            | 290             | 250            | 22  | 85.4  | 6              |                |                |                |                |                |
| <b>GKS14</b> | 100 | 135            | 350             | 305            | 28  | 106.4 | 7              | 290            | 170            | 250            | 6              | M24x35         |

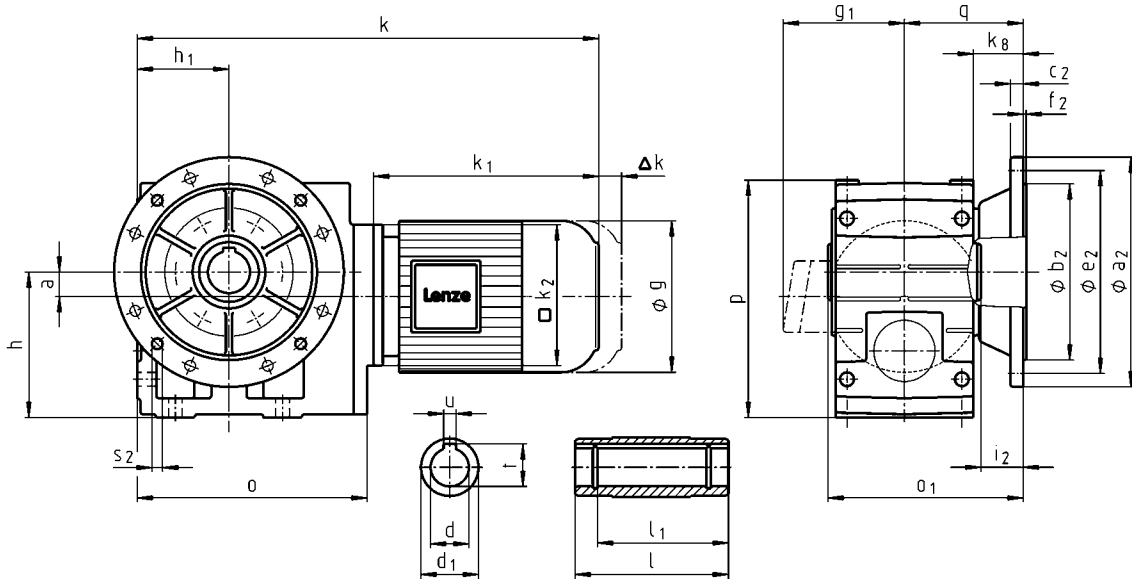
|              | a <sub>5</sub> | a <sub>6</sub> | b <sub>5</sub> | b <sub>6</sub> | b <sub>7</sub> | c <sub>5</sub> | e <sub>5</sub> | f <sub>5</sub> | f <sub>6</sub> | m  | n  | s <sub>5</sub> |
|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|----|----------------|
| <b>GKS04</b> | 45             | 45             | 110            | 119            | 85             | 14             | 105            | 132            | 141            | 21 | 22 | 9              |
| <b>GKS05</b> | 47.5           | 47.5           | 115            | 140            | 105            | 17             | 127            | 144            | 169            | 21 | 29 | 11             |
| <b>GKS06</b> | 60             | 60             | 155            | 170            | 120            | 20             | 145            | 191            | 206            | 23 | 36 | 14             |
| <b>GKS07</b> | 70             | 70             | 190            | 210            | 150            | 25             | 180            | 235            | 255            | 28 | 45 | 18             |
| <b>GKS09</b> | 90             | 90             | 240            | 266            | 185            | 30             | 222            | 300            | 326            | 37 | 60 | 22             |
| <b>GKS11</b> | 105            | 105            | 290            | 325            | 225            | 40             | 270            | 363            | 398            | 43 | 73 | 26             |
| <b>GKS14</b> | 135            | 135            | 360            | 415            | 275            | 50             | 328            | 442            | 497            | 52 | 82 | 33             |

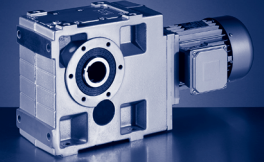
<sup>1)</sup> k<sub>2</sub> !



**GKS**  
GKS [mm] - MF□MA

**GKS□□-3M HAK**



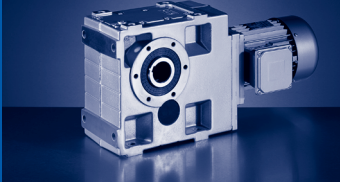


|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|----------------------|---------|------------------|------------------|------------------|--------|------------------|--------|------------------|--------|
| <b>g</b>             |         | 123              | 139              | 156              | 176    | 194              | 218    |                  | 258    |
| <b>B1</b>            | MFEMAXX | 100              | 109              | 141              | 146    | 157              | 167    |                  | 195    |
|                      | MFEMABR | 107              | 118              | 132              | 137    | 147              | 158    |                  | 187    |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              | 224.5            | 274    | 324              | 363    |                  | 403    |
| <b>k<sub>2</sub></b> |         | 120              |                  | 145              |        | 180              | 222    |                  | 265    |
|                      | MFEMABR | 40               | 52               | 73               | 68     | 76               | 90     |                  | 109.5  |
| <b>Δ k</b>           | MFEMAXX |                  |                  | 128              |        | 109              | 102    |                  | 115    |
|                      | MFEMABR | 170              | 165              | 183              | 181    | 170              | 183    |                  | 201.5  |
| <b>k</b>             |         |                  |                  |                  |        |                  |        |                  |        |
| <b>GKS04</b>         |         | 399              | 419              | 441              |        |                  |        |                  |        |
| <b>GKS05</b>         |         | 419              | 439              | 461              | 521    |                  |        |                  |        |
| <b>GKS06</b>         |         | 475              | 495              | 517              | 577    | 627              |        |                  |        |
| <b>GKS07</b>         |         |                  |                  | 573              | 633    | 683              | 728    | 776              |        |
| <b>GKS09</b>         |         |                  |                  |                  | 704    | 754              | 799    |                  | 847    |
| <b>GKS11</b>         |         |                  |                  |                  |        | 845              | 890    |                  | 938    |
| <b>GKS14</b>         |         |                  |                  |                  |        |                  | 989    |                  | 1037   |

|              | a  | h <sup>1)</sup> | h <sub>1</sub> | k <sub>g</sub> | o   | p <sup>1)</sup> | q     |
|--------------|----|-----------------|----------------|----------------|-----|-----------------|-------|
| <b>GKS04</b> | 20 | 100             | 71             | 38.5           | 203 | 171             | 91    |
| <b>GKS05</b> | 23 | 125             | 80             | 40             | 232 | 205             | 103.5 |
| <b>GKS06</b> | 28 | 150             | 100            | 49             | 291 | 250             | 121.5 |
| <b>GKS07</b> | 34 | 190             | 120            | 65.5           | 354 | 310             | 155.5 |
| <b>GKS09</b> | 41 | 236             | 150            | 69.5           | 429 | 386             | 180.5 |
| <b>GKS11</b> | 54 | 300             | 185            | 70.5           | 527 | 485             | 205.5 |
| <b>GKS14</b> | 67 | 375             | 230            | 71.5           | 636 | 605             | 235.5 |

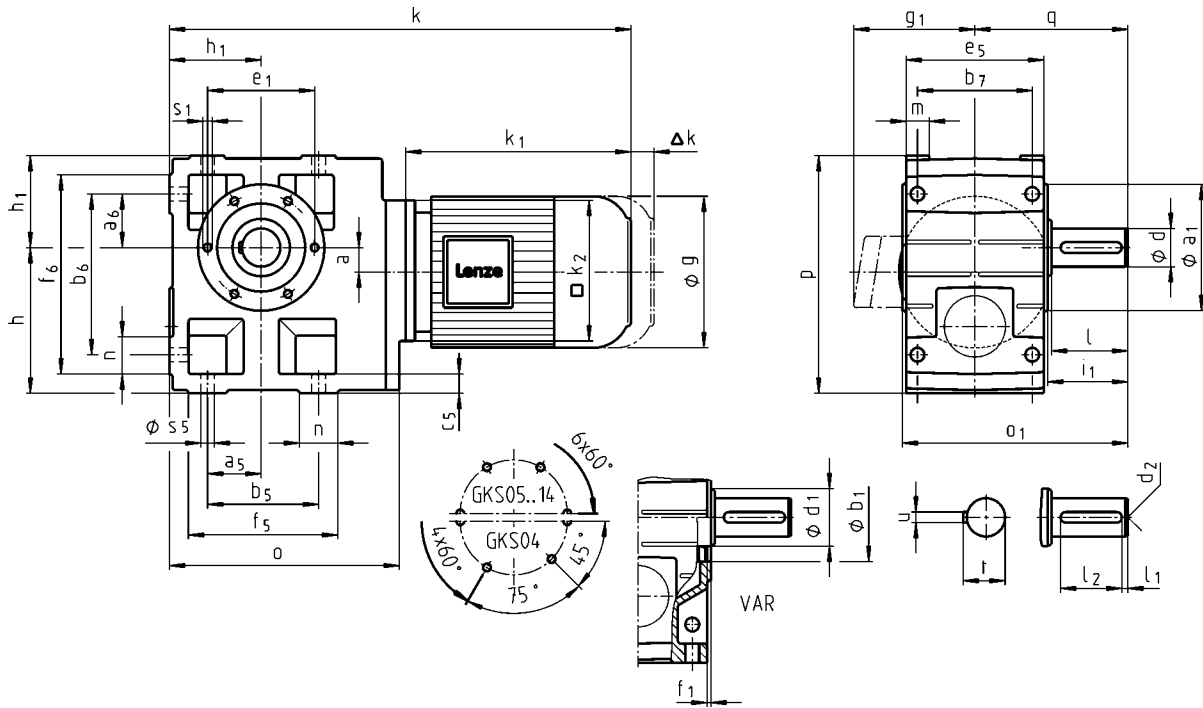
|              | d   | d <sub>1</sub> | l   | l <sub>1</sub> | u   | t     | i <sub>2</sub> | o <sub>1</sub> <sup>1)</sup> | a <sub>2</sub> | b <sub>2</sub> | c <sub>2</sub> | e <sub>2</sub> | f <sub>2</sub> | s <sub>2</sub> |
|--------------|-----|----------------|-----|----------------|-----|-------|----------------|------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | H7  |                |     |                | JS9 | +0,2  |                |                              |                | j7             |                |                |                |                |
| <b>GKS04</b> | 25  | 45             | 115 | 100            | 8   | 28.3  | 33             | 148.5                        | 160            | 110            | 10             | 130            | 3.5            | 4 x 9          |
|              | 30  | 45             | 115 | 100            | 8   | 33.3  | 33             | 148.5                        |                |                |                |                |                |                |
| <b>GKS05</b> | 30  | 50             | 140 | 124            | 8   | 33.3  | 33             | 173.5                        | 200            | 130            | 12             | 165            | 4              | 4 x 11         |
|              | 35  | 50             | 140 | 124            | 10  | 38.3  | 33             | 173.5                        |                |                |                |                |                |                |
| <b>GKS06</b> | 40  | 65             | 160 | 140            | 12  | 43.3  | 42             | 201.5                        | 200            | 180            | 12             | 165            | 3.5            | 4 x 11         |
|              | 45  | 65             | 160 | 140            | 14  | 48.8  | 41             | 201.5                        |                |                |                |                |                |                |
| <b>GKS07</b> | 50  | 75             | 200 | 175            | 14  | 53.8  | 55             | 255.5                        | 250            | 180            | 15             | 215            | 4              | 4 x 14         |
|              | 55  | 75             | 200 | 175            | 16  | 59.3  | 55             | 255.5                        |                |                |                |                |                |                |
| <b>GKS09</b> | 60  | 95             | 240 | 210            | 18  | 64.4  | 60             | 300.5                        | 350            | 250            | 18             | 300            | 4              | 4 x 17.5       |
|              | 70  | 95             | 240 | 210            | 20  | 74.9  | 60             | 300.5                        |                |                |                |                |                |                |
| <b>GKS11</b> | 70  | 105            | 290 | 250            | 20  | 74.9  | 60             | 350.5                        | 400            | 300            | 20             | 350            | 5              | 4 x 17.5       |
|              | 80  | 105            | 290 | 250            | 22  | 85.4  | 60             | 350.5                        |                |                |                |                |                |                |
| <b>GKS14</b> | 100 | 135            | 350 | 305            | 28  | 106.4 | 60             | 410.5                        | 450            | 350            | 22             | 400            | 5              | 8 x 18.5       |

<sup>1)</sup> k<sub>2</sub> !

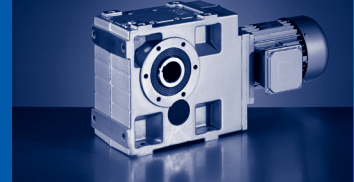


**GKS**  
GKS [mm] - MF□MA

**GKS□□-3M V□R**







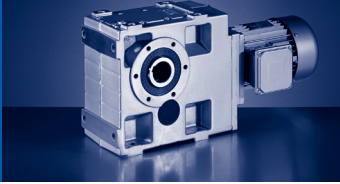
|                |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|----------------|---------|------------------|------------------|------------------|--------|------------------|--------|------------------|--------|
| g              |         | 123              | 139              | 156              | 176    | 194              | 218    |                  | 258    |
| B1             | MFEMAXX | 100              | 109              | 141              | 146    | 157              | 167    |                  | 195    |
|                | MFEMABR | 107              | 118              | 132              | 137    | 147              | 158    |                  | 187    |
| k <sub>1</sub> | MFEMAXX | 187              | 207              | 224.5            | 274    | 324              | 363    |                  | 403    |
| k <sub>2</sub> |         | 120              |                  | 145              |        | 180              |        | 222              | 265    |
|                | MFEMABR | 40               | 52               | 73               | 68     | 76               | 90     |                  | 109.5  |
| Δ k            | MFEMAXX |                  |                  | 128              |        | 109              | 102    |                  | 115    |
|                | MFEMABR | 170              | 165              | 183              | 181    | 170              | 183    |                  | 201.5  |
| k              |         |                  |                  |                  |        |                  |        |                  |        |
| GKS04          |         | 399              | 419              | 441              |        |                  |        |                  |        |
| GKS05          |         | 419              | 439              | 461              | 521    |                  |        |                  |        |
| GKS06          |         | 475              | 495              | 517              | 577    | 627              |        |                  |        |
| GKS07          |         |                  |                  | 573              | 633    | 683              | 728    | 776              |        |
| GKS09          |         |                  |                  |                  | 704    | 754              | 799    |                  | 847    |
| GKS11          |         |                  |                  |                  |        | 845              | 890    |                  | 938    |
| GKS14          |         |                  |                  |                  |        |                  | 989    |                  | 1037   |

|       | a  | h <sup>1)</sup> | h <sub>1</sub> | o   | p <sup>1)</sup> | q     |
|-------|----|-----------------|----------------|-----|-----------------|-------|
| GKS04 | 20 | 100             | 71             | 203 | 171             | 107.5 |
| GKS05 | 23 | 125             | 80             | 232 | 205             | 130   |
| GKS06 | 28 | 150             | 100            | 291 | 250             | 160   |
| GKS07 | 34 | 190             | 120            | 354 | 310             | 200   |
| GKS09 | 41 | 236             | 150            | 429 | 386             | 240   |
| GKS11 | 54 | 300             | 185            | 527 | 485             | 305   |
| GKS14 | 67 | 375             | 230            | 636 | 605             | 375   |

|       | d  | d   | d <sub>1</sub> | d <sub>2</sub> | l   | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i <sub>1</sub> | o <sub>1</sub> <sup>1)</sup> | a <sub>1</sub> | b <sub>1</sub> | e <sub>1</sub> | f <sub>1</sub> | s <sub>1</sub> |
|-------|----|-----|----------------|----------------|-----|----------------|----------------|----|------|----------------|------------------------------|----------------|----------------|----------------|----------------|----------------|
|       | k6 | m6  |                |                |     |                |                |    |      |                |                              |                | H7             |                |                |                |
| GKS04 | 25 |     | 45             | M10            | 50  | 6              | 40             | 8  | 28   | 52.5           | 162.5                        | 104            | 75             | 90             | 3              | M6x12          |
| GKS05 | 30 |     | 45             | M10            | 60  | 6              | 45             | 8  | 33   | 64             | 196.5                        | 118            | 80             | 100            | 4              | M8x15          |
| GKS06 | 40 |     | 65             | M16            | 80  | 7              | 63             | 12 | 43   | 85             | 235.5                        | 140            | 100            | 120            | 4              | M10x16         |
| GKS07 | 50 |     | 75             | M16            | 100 | 8              | 80             | 14 | 53.5 | 105            | 295.5                        | 165            | 115            | 140            | 5              | M12x18         |
| GKS09 |    | 60  | 95             | M20            | 120 | 8              | 100            | 18 | 64   | 125            | 355.5                        | 205            | 145            | 175            | 6              | M16x24         |
| GKS11 |    | 80  | 105            | M20            | 160 | 15             | 125            | 22 | 85   | 166            | 444.5                        | 240            | 140            | 205            | 6              | M20x32         |
| GKS14 |    | 100 | 135            | M24            | 200 | 18             | 160            | 28 | 106  | 207            | 543.5                        | 290            | 170            | 250            | 6              | M24x35         |

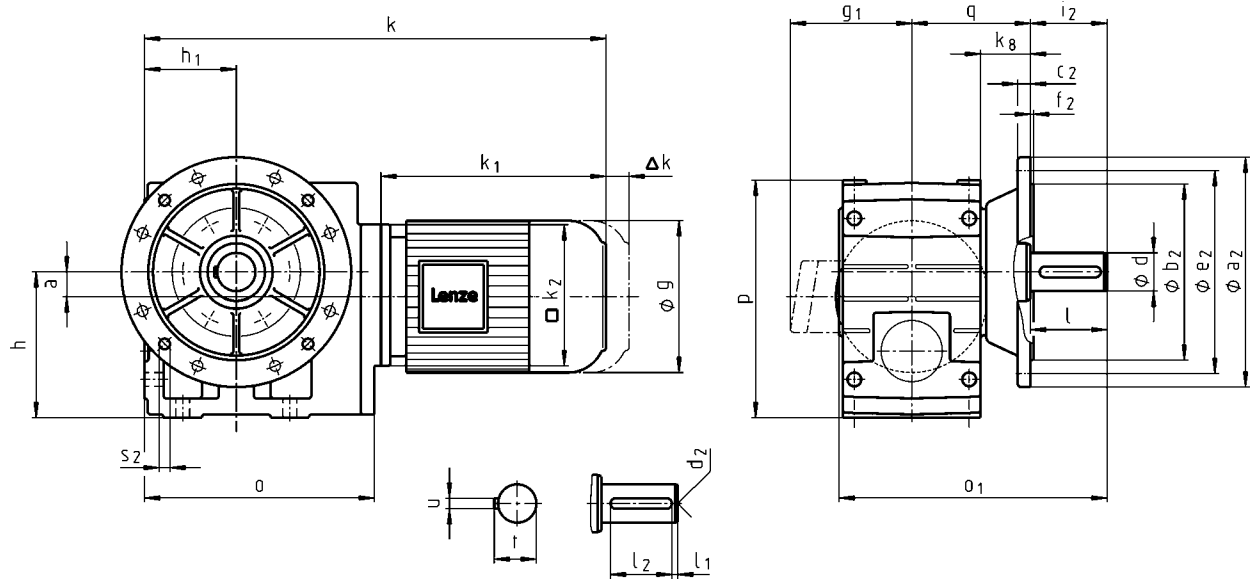
|       | a <sub>5</sub> | a <sub>6</sub> | b <sub>5</sub> | b <sub>6</sub> | b <sub>7</sub> | c <sub>5</sub> | e <sub>5</sub> | f <sub>5</sub> | f <sub>6</sub> | m  | n  | s <sub>5</sub> |
|-------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|----|----------------|
| GKS04 | 45             | 45             | 110            | 119            | 85             | 14             | 105            | 132            | 141            | 21 | 22 | 9              |
| GKS05 | 47.5           | 47.5           | 115            | 140            | 105            | 17             | 127            | 144            | 169            | 21 | 29 | 11             |
| GKS06 | 60             | 60             | 155            | 170            | 120            | 20             | 145            | 191            | 206            | 23 | 36 | 14             |
| GKS07 | 70             | 70             | 190            | 210            | 150            | 25             | 180            | 235            | 255            | 28 | 45 | 18             |
| GKS09 | 90             | 90             | 240            | 266            | 185            | 30             | 222            | 300            | 326            | 37 | 60 | 22             |
| GKS11 | 105            | 105            | 290            | 325            | 225            | 40             | 270            | 363            | 398            | 43 | 73 | 26             |
| GKS14 | 135            | 135            | 360            | 415            | 275            | 50             | 328            | 442            | 497            | 52 | 82 | 33             |

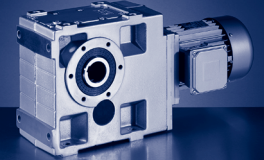
<sup>1)</sup> k<sub>2</sub> !



**GKS**  
GKS [mm] - MF□MA

**GKS□□-3M VAK**



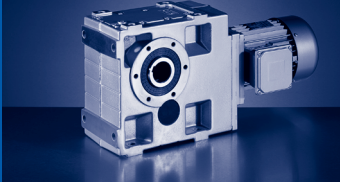


|                      |              | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|----------------------|--------------|------------------|------------------|------------------|--------|------------------|--------|------------------|--------|
| <b>g</b>             |              | 123              | 139              | 156              | 176    | 194              | 218    |                  | 258    |
| <b>B1</b>            | MFEMAXX      | 100              | 109              | 141              | 146    | 157              | 167    |                  | 195    |
|                      | MFEMABR      | 107              | 118              | 132              | 137    | 147              | 158    |                  | 187    |
| <b>k<sub>1</sub></b> | MFEMAXX      | 187              | 207              | 224.5            | 274    | 324              | 363    |                  | 403    |
| <b>k<sub>2</sub></b> |              | 120              |                  | 145              |        | 180              | 222    |                  | 265    |
|                      | MFEMABR      | 40               | 52               | 73               | 68     | 76               | 90     |                  | 109.5  |
| <b>Δ k</b>           | MFEMAXX      |                  |                  | 128              |        | 109              | 102    |                  | 115    |
|                      | MFEMABR      | 170              | 165              | 183              | 181    | 170              | 183    |                  | 201.5  |
| <b>k</b>             |              |                  |                  |                  |        |                  |        |                  |        |
|                      | <b>GKS04</b> | 399              | 419              | 441              |        |                  |        |                  |        |
|                      | <b>GKS05</b> | 419              | 439              | 461              | 521    |                  |        |                  |        |
|                      | <b>GKS06</b> | 475              | 495              | 517              | 577    | 627              |        |                  |        |
|                      | <b>GKS07</b> |                  |                  | 573              | 633    | 683              | 728    | 776              |        |
|                      | <b>GKS09</b> |                  |                  |                  | 704    | 754              | 799    |                  | 847    |
|                      | <b>GKS11</b> |                  |                  |                  |        | 845              | 890    |                  | 938    |
|                      | <b>GKS14</b> |                  |                  |                  |        |                  | 989    |                  | 1037   |

|              | a  | h <sup>1)</sup> | h <sub>1</sub> | k <sub>g</sub> | o   | p <sup>1)</sup> | q     |
|--------------|----|-----------------|----------------|----------------|-----|-----------------|-------|
| <b>GKS04</b> | 20 | 100             | 71             | 38.5           | 203 | 171             | 91    |
| <b>GKS05</b> | 23 | 125             | 80             | 40             | 232 | 205             | 103.5 |
| <b>GKS06</b> | 28 | 150             | 100            | 49             | 291 | 250             | 121.5 |
| <b>GKS07</b> | 34 | 190             | 120            | 65.5           | 354 | 310             | 155.5 |
| <b>GKS09</b> | 41 | 236             | 150            | 69.5           | 429 | 386             | 180.5 |
| <b>GKS11</b> | 54 | 300             | 185            | 70.5           | 527 | 485             | 205.5 |
| <b>GKS14</b> | 67 | 375             | 230            | 71.5           | 636 | 605             | 235.5 |

|              | d  | d   | d <sub>2</sub> | l   | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i <sub>2</sub> | α <sub>1</sub> <sup>1)</sup> | a <sub>2</sub> | b <sub>2</sub> | c <sub>2</sub> | e <sub>2</sub> | f <sub>2</sub> | s <sub>2</sub>             |
|--------------|----|-----|----------------|-----|----------------|----------------|----|------|----------------|------------------------------|----------------|----------------|----------------|----------------|----------------|----------------------------|
|              | k6 | m6  |                |     |                |                |    |      |                |                              |                | j7             |                |                |                |                            |
| <b>GKS04</b> | 25 |     | M10            | 50  | 6              | 40             | 8  | 28   | 50             | 195.5                        | 160            | 110            | 10             | 130            | 3.5            | 4 x 9                      |
| <b>GKS05</b> | 30 |     | M10            | 60  | 6              | 45             | 8  | 33   | 60             | 229.5                        | 200            | 130            | 12             | 165            | 4              | 4 x 11                     |
| <b>GKS06</b> | 40 |     | M16            | 80  | 7              | 63             | 12 | 43   | 80             | 276.5                        | 250            | 180            | 15             | 215            | 4              | 4 x 14                     |
| <b>GKS07</b> | 50 |     | M16            | 100 | 8              | 80             | 14 | 53.5 | 100            | 350.5                        | 250<br>300     | 180<br>230     | 15<br>17       | 215<br>265     | 4<br>4         | 4 x 14<br>4 x 14           |
| <b>GKS09</b> |    | 60  | M20            | 120 | 8              | 100            | 18 | 64   | 120            | 415.5                        | 350            | 250            | 18             | 300            | 4              | 4 x<br>17.5                |
| <b>GKS11</b> |    | 80  | M20            | 160 | 15             | 125            | 22 | 85   | 160            | 504.5                        | 400<br>450     | 300<br>350     | 20<br>22       | 350<br>400     | 5<br>5         | 4 x<br>17.5<br>8 x<br>17.5 |
| <b>GKS14</b> |    | 100 | M24            | 200 | 18             | 160            | 28 | 106  | 200            | 603.5                        | 450            | 350            | 22             | 400            | 5              | 8 x<br>18.5                |

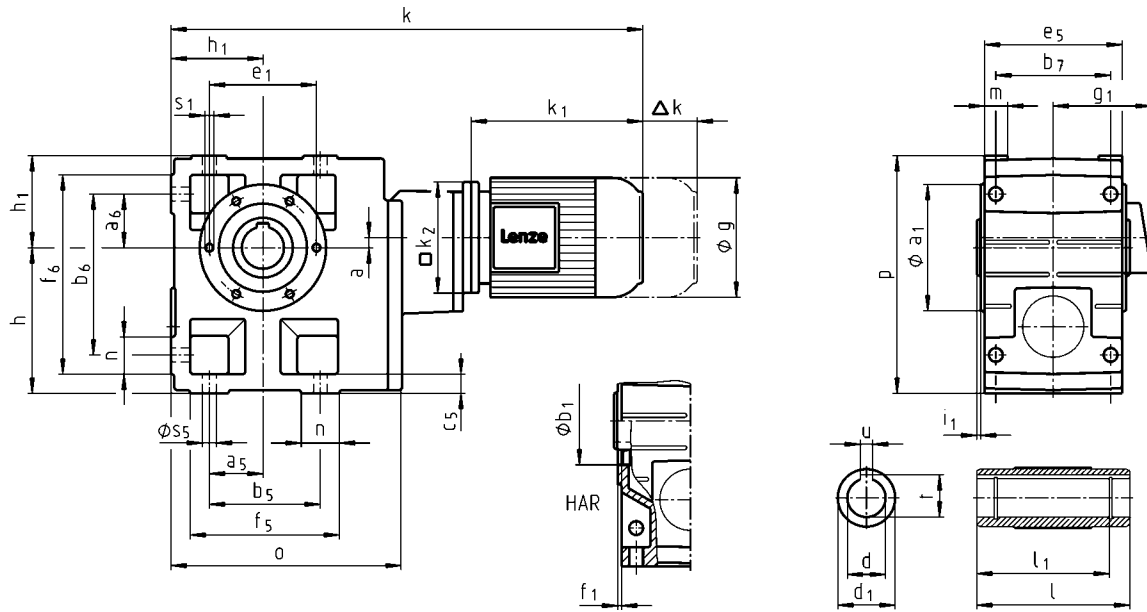
<sup>1)</sup> k<sub>2</sub> !



# GKS

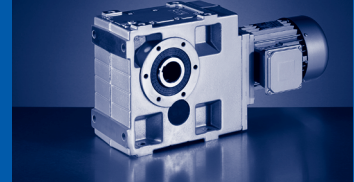
GKS [mm] - MF□MA

## GKS□□-4M H□R



|                              |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 |
|------------------------------|---------|------------------|------------------|--------|--------|
| <b>g</b>                     |         | 123              | 139              |        | 156    |
| <b>g<sub>1</sub></b>         | MFEMAXX | 100              | 109              |        | 141    |
|                              | MFEMABR | 107              | 118              |        | 132    |
| <b>k<sub>1</sub></b>         | MFEMAXX | 187              | 207              |        | 224.5  |
| <b>k<sub>2</sub></b>         |         |                  | 120              |        | 145    |
| <b><math>\Delta k</math></b> | MFEMABR | 40               | 52               |        | 73     |
|                              | MFFMAXX |                  |                  | 128    |        |
|                              | MFFMABR | 170              | 165              |        | 183    |
| <b>k</b>                     |         |                  |                  |        |        |
| <b>GKS05</b>                 |         | 495              |                  |        |        |
| <b>GKS06</b>                 |         | 568              | 588              | 611    |        |
| <b>GKS07</b>                 |         | 635              | 655              |        | 678    |
| <b>GKS09</b>                 |         | 724              | 744              |        | 767    |
| <b>GKS11</b>                 |         |                  |                  |        | 877    |

6

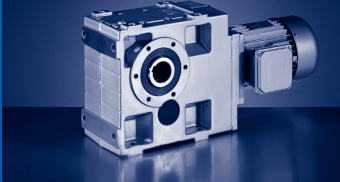


|                      |         | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|----------------------|---------|--------|------------------|--------|------------------|--------|
| <b>g</b>             |         | 176    | 194              | 218    | 258              |        |
| <b>B1</b>            | MFEMAXX | 146    | 157              | 167    | 195              |        |
|                      | MFEMABR | 137    | 147              | 158    | 187              |        |
| <b>k<sub>1</sub></b> | MFEMAXX | 274    | 324              | 363    | 403              |        |
| <b>k<sub>2</sub></b> |         | 180    |                  | 222    | 265              |        |
| <b>Δ k</b>           | MFEMABR | 68     | 76               | 90     | 109.5            |        |
|                      | MFFMAXX | 128    | 109              | 102    | 115              |        |
|                      | MFFMABR | 181    | 170              | 183    | 201.5            |        |
| <b>k</b>             |         |        |                  |        |                  |        |
| <b>GKS07</b>         |         | 737    |                  |        |                  |        |
| <b>GKS09</b>         |         | 826    | 876              | 921    |                  |        |
| <b>GKS11</b>         |         | 936    | 986              | 1031   | 1079             |        |
| <b>GKS14</b>         |         | 1069   | 1119             | 1164   |                  | 1212   |

|              | a  | h   | h <sub>1</sub> | o     | p   |
|--------------|----|-----|----------------|-------|-----|
| <b>GKS05</b> | 13 | 125 | 80             | 226   | 205 |
| <b>GKS06</b> | 8  | 150 | 100            | 288   | 250 |
| <b>GKS07</b> | 11 | 190 | 120            | 350.5 | 310 |
| <b>GKS09</b> | 15 | 236 | 150            | 426   | 386 |
| <b>GKS11</b> | 16 | 300 | 185            | 523   | 485 |
| <b>GKS14</b> | 22 | 375 | 230            | 632   | 605 |

|              | d        | d <sub>1</sub> | l          | l <sub>1</sub> | u        | t            | i <sub>1</sub> | a <sub>1</sub> | b <sub>1</sub> | e <sub>1</sub> | f <sub>1</sub> | s <sub>1</sub> |
|--------------|----------|----------------|------------|----------------|----------|--------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | H7       |                |            |                | JS9      | +0,2         |                |                | H7             |                |                |                |
| <b>GKS05</b> | 30<br>35 | 50<br>50       | 140<br>140 | 124<br>124     | 8<br>10  | 33.3<br>38.3 | 4<br>4         | 118            | 80             | 100            | 4              | M8x15          |
| <b>GKS06</b> | 40<br>45 | 65<br>65       | 160<br>160 | 140<br>140     | 12<br>14 | 43.3<br>48.8 | 5<br>5         | 140            | 100            | 120            | 4              | M10x16         |
| <b>GKS07</b> | 50<br>55 | 75<br>75       | 200<br>200 | 175<br>175     | 14<br>16 | 53.8<br>59.3 | 5<br>5         | 165            | 115            | 140            | 5              | M12x18         |
| <b>GKS09</b> | 60<br>70 | 95<br>95       | 240<br>240 | 210<br>210     | 18<br>20 | 64.4<br>74.9 | 5<br>5         | 205            | 145            | 175            | 6              | M16x24         |
| <b>GKS11</b> | 70<br>80 | 105<br>105     | 290<br>290 | 250<br>250     | 20<br>22 | 74.9<br>85.4 | 6<br>6         | 240            | 140            | 205            | 6              | M20x32         |
| <b>GKS14</b> | 100      | 135            | 350        | 305            | 28       | 106.4        | 7              | 290            | 170            | 250            | 6              | M24x35         |

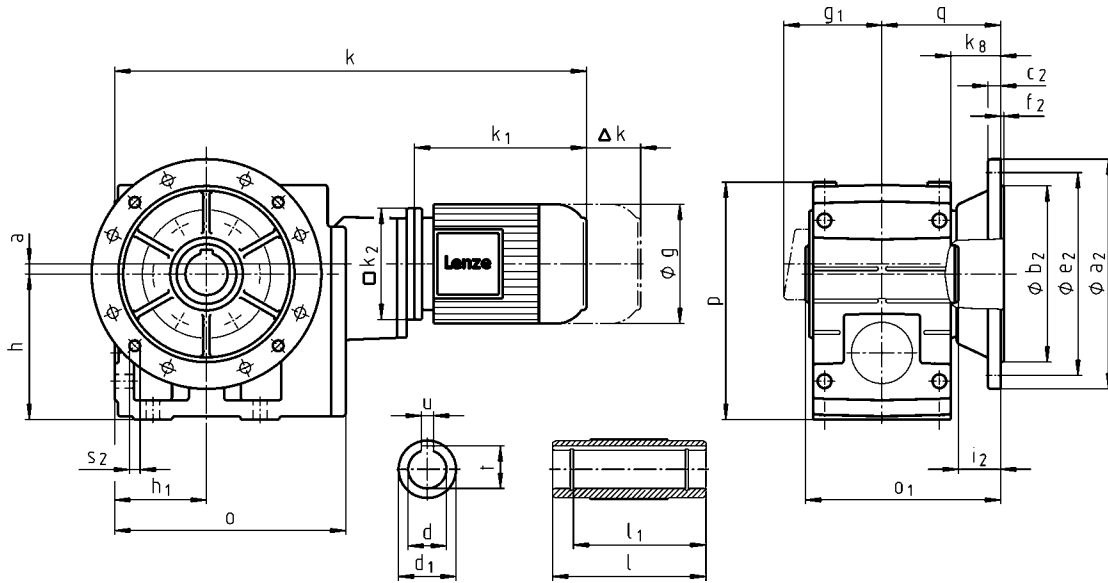
|              | a <sub>5</sub> | a <sub>6</sub> | b <sub>5</sub> | b <sub>6</sub> | b <sub>7</sub> | c <sub>5</sub> | e <sub>5</sub> | f <sub>5</sub> | f <sub>6</sub> | m  | n  | s <sub>5</sub> |
|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|----|----------------|
| <b>GKS05</b> | 47.5           | 47.5           | 115            | 140            | 105            | 17             | 127            | 144            | 169            | 21 | 29 | 11             |
| <b>GKS06</b> | 60             | 60             | 155            | 170            | 120            | 20             | 145            | 191            | 206            | 23 | 36 | 14             |
| <b>GKS07</b> | 70             | 70             | 190            | 210            | 150            | 25             | 180            | 235            | 255            | 28 | 45 | 18             |
| <b>GKS09</b> | 90             | 90             | 240            | 266            | 185            | 30             | 222            | 300            | 326            | 37 | 60 | 22             |
| <b>GKS11</b> | 105            | 105            | 290            | 325            | 225            | 40             | 270            | 363            | 398            | 43 | 73 | 26             |
| <b>GKS14</b> | 135            | 135            | 360            | 415            | 275            | 50             | 328            | 442            | 497            | 52 | 82 | 33             |



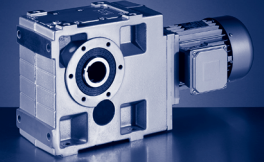
# GKS

GKS [mm] - MF□MA

## GKS□□-4M HAK



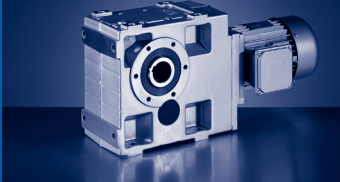
|            |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 |
|------------|---------|------------------|------------------|--------|--------|
| $g$        |         | 123              | 139              |        | 156    |
| $g_1$      | MFEMAXX | 100              | 109              |        | 141    |
|            | MFEMABR | 107              | 118              |        | 132    |
| $k_1$      | MFEMAXX | 187              | 207              |        | 224.5  |
| $k_2$      |         | 120              |                  |        | 145    |
| $\Delta k$ | MFEMABR | 40               | 52               |        | 73     |
|            | MFFMAXX |                  |                  | 128    |        |
|            | MFFMABR | 170              | 165              |        | 183    |
|            |         | $k$              |                  |        |        |
| GKS05      |         | 495              |                  |        |        |
| GKS06      |         | 568              | 588              | 611    |        |
| GKS07      |         | 635              | 655              |        | 678    |
| GKS09      |         | 724              | 744              |        | 767    |
| GKS11      |         |                  |                  |        | 877    |



|                      |         | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|----------------------|---------|--------|------------------|--------|------------------|--------|
| <b>g</b>             |         | 176    | 194              | 218    | 258              |        |
| <b>B1</b>            | MFEMAXX | 146    | 157              | 167    | 195              |        |
|                      | MFEMABR | 137    | 147              | 158    | 187              |        |
| <b>k<sub>1</sub></b> | MFEMAXX | 274    | 324              | 363    | 403              |        |
| <b>k<sub>2</sub></b> |         | 180    |                  | 222    | 265              |        |
| <b>Δ k</b>           | MFEMABR | 68     | 76               | 90     | 109.5            |        |
|                      | MFFMAXX | 128    | 109              | 102    | 115              |        |
|                      | MFFMABR | 181    | 170              | 183    | 201.5            |        |
| <b>k</b>             |         |        |                  |        |                  |        |
| <b>GKS07</b>         |         | 737    |                  |        |                  |        |
| <b>GKS09</b>         |         | 826    | 876              | 921    |                  |        |
| <b>GKS11</b>         |         | 936    | 986              | 1031   | 1079             |        |
| <b>GKS14</b>         |         | 1069   | 1119             | 1164   |                  | 1212   |

|              | a  | h   | h <sub>1</sub> | k <sub>g</sub> | o     | p   | q     |
|--------------|----|-----|----------------|----------------|-------|-----|-------|
| <b>GKS05</b> | 13 | 125 | 80             | 40             | 226   | 205 | 103.5 |
| <b>GKS06</b> | 8  | 150 | 100            | 49             | 288   | 250 | 121.5 |
| <b>GKS07</b> | 11 | 190 | 120            | 65.5           | 350.5 | 310 | 155.5 |
| <b>GKS09</b> | 15 | 236 | 150            | 69.5           | 426   | 386 | 180.5 |
| <b>GKS11</b> | 16 | 300 | 185            | 70.5           | 523   | 485 | 205.5 |
| <b>GKS14</b> | 22 | 375 | 230            | 71.5           | 632   | 605 | 235.5 |

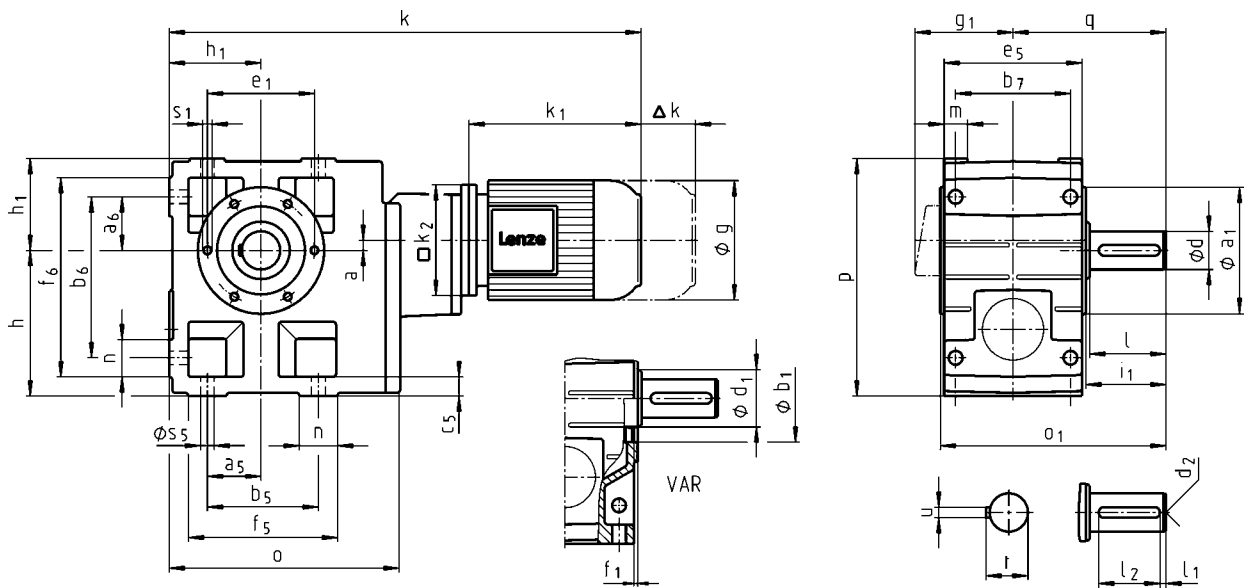
|              | d   | d <sub>1</sub> | l   | l <sub>1</sub> | u   | t     | i <sub>2</sub> | o <sub>1</sub> | a <sub>2</sub> | b <sub>2</sub> | c <sub>2</sub> | e <sub>2</sub> | f <sub>2</sub> | s <sub>2</sub> |
|--------------|-----|----------------|-----|----------------|-----|-------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | H7  |                |     |                | JS9 | +0,2  |                |                |                | j7             |                |                |                |                |
| <b>GKS05</b> | 30  | 50             | 140 | 124            | 8   | 33.3  | 33             | 173.5          | 200            | 130            | 12             | 165            | 4              | 4 x 11         |
|              | 35  | 50             | 140 | 124            | 10  | 38.3  | 33             | 173.5          |                |                |                |                |                |                |
| <b>GKS06</b> | 40  | 65             | 160 | 140            | 12  | 43.3  | 42             | 201.5          | 200            | 180            | 12             | 165            | 3.5            | 4 x 11         |
|              | 45  | 65             | 160 | 140            | 14  | 48.8  | 41             | 201.5          |                |                |                |                |                |                |
| <b>GKS07</b> | 50  | 75             | 200 | 175            | 14  | 53.8  | 55             | 255.5          | 250            | 180            | 15             | 215            | 4              | 4 x 14         |
|              | 55  | 75             | 200 | 175            | 16  | 59.3  | 55             | 255.5          |                |                |                |                |                |                |
| <b>GKS09</b> | 60  | 95             | 240 | 210            | 18  | 64.4  | 60             | 300.5          | 350            | 250            | 18             | 300            | 4              | 4 x 17.5       |
|              | 70  | 95             | 240 | 210            | 20  | 74.9  | 60             | 300.5          |                |                |                |                |                |                |
| <b>GKS11</b> | 70  | 105            | 290 | 250            | 20  | 74.9  | 60             | 350.5          | 400            | 300            | 20             | 350            | 5              | 4 x 17.5       |
|              | 80  | 105            | 290 | 250            | 22  | 85.4  | 60             | 350.5          |                |                |                |                |                |                |
| <b>GKS14</b> | 100 | 135            | 350 | 305            | 28  | 106.4 | 60             | 410.5          | 450            | 350            | 22             | 400            | 5              | 8 x 18.5       |



# GKS

GKS [mm] - MF□MA

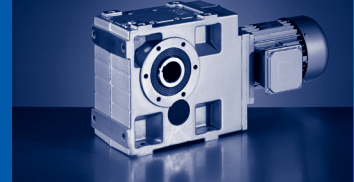
## GKS□□-4M V□R



|                |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 |
|----------------|---------|------------------|------------------|--------|--------|
| g              |         | 123              | 139              |        | 156    |
| g <sub>1</sub> | MFEMAXX | 100              | 109              |        | 141    |
|                | MFEMABR | 107              | 118              |        | 132    |
| k <sub>1</sub> | MFEMAXX | 187              | 207              |        | 224.5  |
| k <sub>2</sub> |         | 120              |                  |        | 145    |
| $\Delta k$     | MFEMABR | 40               | 52               |        | 73     |
|                | MFFMAXX |                  |                  | 128    |        |
|                | MFFMABR | 170              | 165              |        | 183    |
|                |         | k                |                  |        |        |
| GKS05          |         | 495              |                  |        |        |
| GKS06          |         | 568              | 588              | 611    |        |
| GKS07          |         | 635              | 655              |        | 678    |
| GKS09          |         | 724              | 744              |        | 767    |
| GKS11          |         |                  |                  |        | 877    |

6



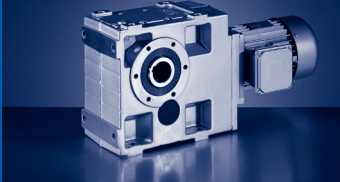


|                      |         | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|----------------------|---------|--------|------------------|--------|------------------|--------|
| <b>g</b>             |         | 176    | 194              | 218    | 258              |        |
| <b>B1</b>            | MFEMAXX | 146    | 157              | 167    | 195              |        |
|                      | MFEMABR | 137    | 147              | 158    | 187              |        |
| <b>k<sub>1</sub></b> | MFEMAXX | 274    | 324              | 363    | 403              |        |
| <b>k<sub>2</sub></b> |         | 180    |                  | 222    | 265              |        |
|                      | MFEMABR | 68     | 76               | 90     | 109.5            |        |
| <b>Δ k</b>           | MFFMAXX | 128    | 109              | 102    | 115              |        |
|                      | MFFMABR | 181    | 170              | 183    | 201.5            |        |
| <b>k</b>             |         |        |                  |        |                  |        |
| <b>GKS07</b>         |         | 737    |                  |        |                  |        |
| <b>GKS09</b>         |         | 826    | 876              | 921    |                  |        |
| <b>GKS11</b>         |         | 936    | 986              | 1031   | 1079             |        |
| <b>GKS14</b>         |         | 1069   | 1119             | 1164   | 1212             |        |

|              | a  | h   | h <sub>1</sub> | o     | p   | q   |
|--------------|----|-----|----------------|-------|-----|-----|
| <b>GKS05</b> | 13 | 125 | 80             | 226   | 205 | 130 |
| <b>GKS06</b> | 8  | 150 | 100            | 288   | 250 | 160 |
| <b>GKS07</b> | 11 | 190 | 120            | 350.5 | 310 | 200 |
| <b>GKS09</b> | 15 | 236 | 150            | 426   | 386 | 240 |
| <b>GKS11</b> | 16 | 300 | 185            | 523   | 485 | 305 |
| <b>GKS14</b> | 22 | 375 | 230            | 632   | 605 | 375 |

|              | d  | d   | d <sub>1</sub> | d <sub>2</sub> | l   | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i <sub>1</sub> | o <sub>1</sub> | a <sub>1</sub> | b <sub>1</sub> | e <sub>1</sub> | f <sub>1</sub> | s <sub>1</sub> |
|--------------|----|-----|----------------|----------------|-----|----------------|----------------|----|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | k6 | m6  |                |                |     |                |                |    |      |                |                |                | H7             |                |                |                |
| <b>GKS05</b> | 30 |     | 45             | M10            | 60  | 6              | 45             | 8  | 33   | 64             | 196.5          | 118            | 80             | 100            | 4              | M8x15          |
| <b>GKS06</b> | 40 |     | 65             | M16            | 80  | 7              | 63             | 12 | 43   | 85             | 235.5          | 140            | 100            | 120            | 4              | M10x16         |
| <b>GKS07</b> | 50 |     | 75             | M16            | 100 | 8              | 80             | 14 | 53.5 | 105            | 295.5          | 165            | 115            | 140            | 5              | M12x18         |
| <b>GKS09</b> |    | 60  | 95             | M20            | 120 | 8              | 100            | 18 | 64   | 125            | 355.5          | 205            | 145            | 175            | 6              | M16x24         |
| <b>GKS11</b> |    | 80  | 105            | M20            | 160 | 15             | 125            | 22 | 85   | 166            | 444.5          | 240            | 140            | 205            | 6              | M20x32         |
| <b>GKS14</b> |    | 100 | 135            | M24            | 200 | 18             | 160            | 28 | 106  | 207            | 543.5          | 290            | 170            | 250            | 6              | M24x35         |

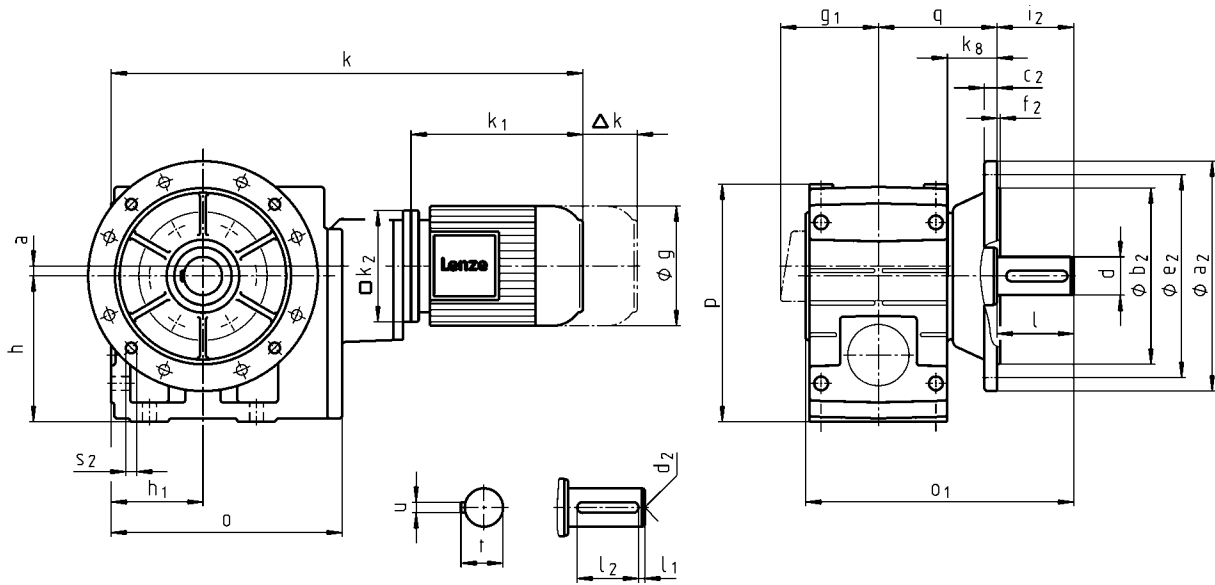
|              | a <sub>5</sub> | a <sub>6</sub> | b <sub>5</sub> | b <sub>6</sub> | b <sub>7</sub> | c <sub>5</sub> | e <sub>5</sub> | f <sub>5</sub> | f <sub>6</sub> | m  | n  | s <sub>5</sub> |
|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|----|----------------|
| <b>GKS05</b> | 47.5           | 47.5           | 115            | 140            | 105            | 17             | 127            | 144            | 169            | 21 | 29 | 11             |
| <b>GKS06</b> | 60             | 60             | 155            | 170            | 120            | 20             | 145            | 191            | 206            | 23 | 36 | 14             |
| <b>GKS07</b> | 70             | 70             | 190            | 210            | 150            | 25             | 180            | 235            | 255            | 28 | 45 | 18             |
| <b>GKS09</b> | 90             | 90             | 240            | 266            | 185            | 30             | 222            | 300            | 326            | 37 | 60 | 22             |
| <b>GKS11</b> | 105            | 105            | 290            | 325            | 225            | 40             | 270            | 363            | 398            | 43 | 73 | 26             |
| <b>GKS14</b> | 135            | 135            | 360            | 415            | 275            | 50             | 328            | 442            | 497            | 52 | 82 | 33             |



# GKS

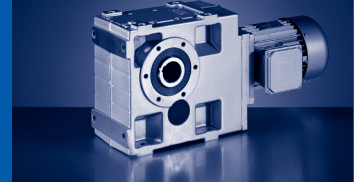
GKS [mm] - MF□MA

## GKS□□-4M VAK



|                |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 |
|----------------|---------|------------------|------------------|--------|--------|
| g              |         | 123              | 139              |        | 156    |
| g <sub>1</sub> | MFEMAXX | 100              | 109              |        | 141    |
|                | MFEMABR | 107              | 118              |        | 132    |
| k <sub>1</sub> | MFEMAXX | 187              | 207              |        | 224.5  |
| k <sub>2</sub> |         |                  | 120              |        | 145    |
| Δ k            | MFEMABR | 40               | 52               |        | 73     |
|                | MFFMAXX |                  |                  | 128    |        |
|                | MFFMABR | 170              | 165              |        | 183    |
|                |         | k                |                  |        |        |
| GKS05          |         | 495              |                  |        |        |
| GKS06          |         | 568              | 588              | 611    |        |
| GKS07          |         | 635              | 655              |        | 678    |
| GKS09          |         | 724              | 744              |        | 767    |
| GKS11          |         |                  |                  |        | 877    |

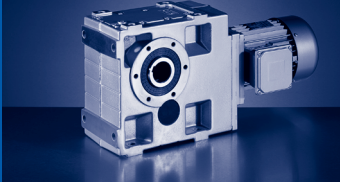
6



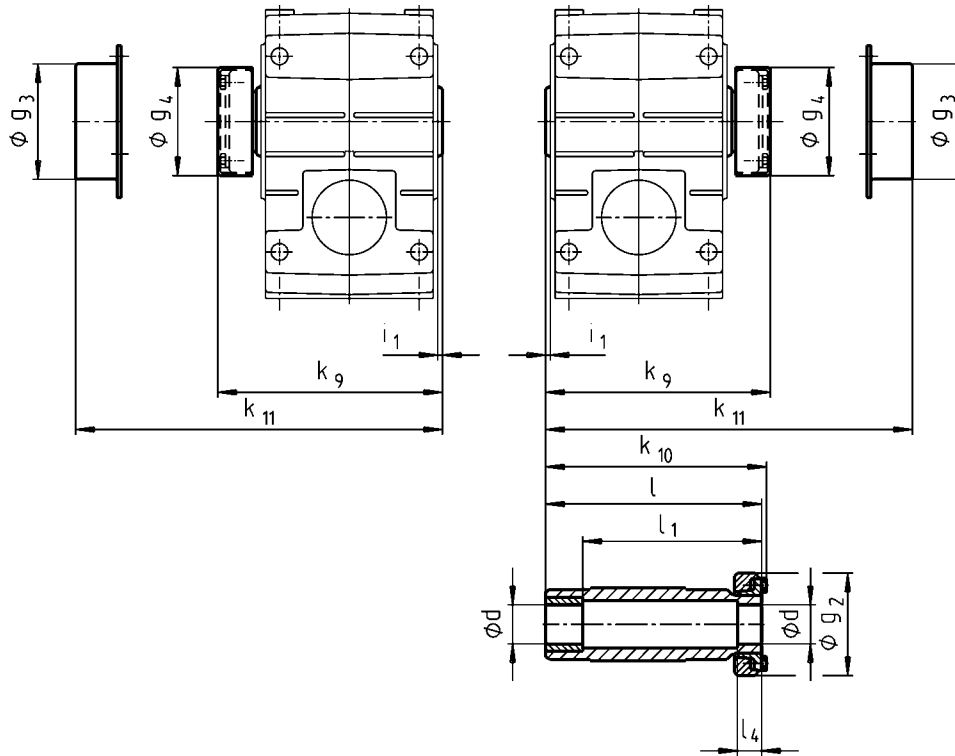
|                      |         | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 | 132C32 |
|----------------------|---------|--------|------------------|--------|------------------|--------|
| <b>g</b>             |         | 176    | 194              | 218    | 258              |        |
| <b>B1</b>            | MFEMAXX | 146    | 157              | 167    | 195              |        |
|                      | MFEMABR | 137    | 147              | 158    | 187              |        |
| <b>k<sub>1</sub></b> | MFEMAXX | 274    | 324              | 363    | 403              |        |
| <b>k<sub>2</sub></b> |         | 180    |                  | 222    | 265              |        |
| <b>Δ k</b>           | MFEMABR | 68     | 76               | 90     | 109.5            |        |
|                      | MFFMAXX | 128    | 109              | 102    | 115              |        |
|                      | MFFMABR | 181    | 170              | 183    | 201.5            |        |
| <b>k</b>             |         |        |                  |        |                  |        |
| <b>GKS07</b>         |         | 737    |                  |        |                  |        |
| <b>GKS09</b>         |         | 826    | 876              | 921    |                  |        |
| <b>GKS11</b>         |         | 936    | 986              | 1031   | 1079             |        |
| <b>GKS14</b>         |         | 1069   | 1119             | 1164   |                  | 1212   |

|              | a  | h   | h <sub>1</sub> | k <sub>g</sub> | o     | p   | q     |
|--------------|----|-----|----------------|----------------|-------|-----|-------|
| <b>GKS05</b> | 13 | 125 | 80             | 40             | 226   | 205 | 103.5 |
| <b>GKS06</b> | 8  | 150 | 100            | 49             | 288   | 250 | 121.5 |
| <b>GKS07</b> | 11 | 190 | 120            | 65.5           | 350.5 | 310 | 155.5 |
| <b>GKS09</b> | 15 | 236 | 150            | 69.5           | 426   | 386 | 180.5 |
| <b>GKS11</b> | 16 | 300 | 185            | 70.5           | 523   | 485 | 205.5 |
| <b>GKS14</b> | 22 | 375 | 230            | 71.5           | 632   | 605 | 235.5 |

|              | d  | d   | d <sub>2</sub> | l   | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i <sub>2</sub> | o <sub>1</sub> | a <sub>2</sub> | b <sub>2</sub> | c <sub>2</sub> | e <sub>2</sub> | f <sub>2</sub> | s <sub>2</sub>             |
|--------------|----|-----|----------------|-----|----------------|----------------|----|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------------------|
|              | k6 | m6  |                |     |                |                |    |      |                |                |                | j7             |                |                |                |                            |
| <b>GKS05</b> | 30 |     | M10            | 60  | 6              | 45             | 8  | 33   | 60             | 229.5          | 200            | 130            | 12             | 165            | 4              | 4 x 11                     |
| <b>GKS06</b> | 40 |     | M16            | 80  | 7              | 63             | 12 | 43   | 80             | 276.5          | 250            | 180            | 15             | 215            | 4              | 4 x 14                     |
| <b>GKS07</b> | 50 |     | M16            | 100 | 8              | 80             | 14 | 53.5 | 100            | 350.5          | 250<br>300     | 180<br>230     | 15<br>17       | 215<br>265     | 4<br>4         | 4 x 14<br>4 x 14           |
| <b>GKS09</b> |    | 60  | M20            | 120 | 8              | 100            | 18 | 64   | 120            | 415.5          | 350            | 250            | 18             | 300            | 4              | 4 x<br>17.5                |
| <b>GKS11</b> |    | 80  | M20            | 160 | 15             | 125            | 22 | 85   | 160            | 504.5          | 400<br>450     | 300<br>350     | 20<br>22       | 350<br>400     | 5<br>5         | 4 x<br>17.5<br>8 x<br>17.5 |
| <b>GKS14</b> |    | 100 | M24            | 200 | 18             | 160            | 28 | 106  | 200            | 603.5          | 450            | 350            | 22             | 400            | 5              | 8 x<br>18.5                |



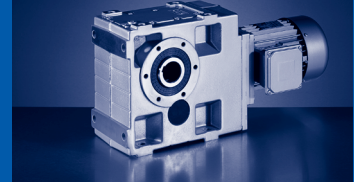
**Hollow shaft with shrink disc**



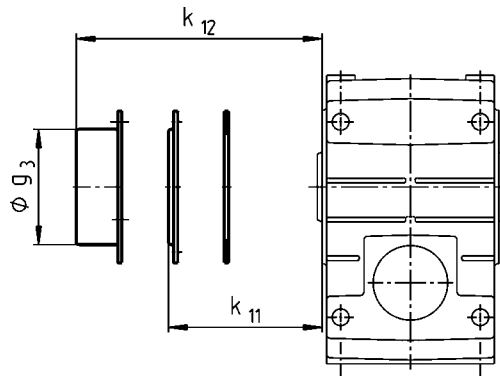
|              | d        | g <sub>2</sub> | g <sub>3</sub> | g <sub>4</sub> | i <sub>1</sub> | k <sub>9</sub> | k <sub>10</sub> | k <sub>11</sub> | l   | l <sub>1</sub> | l <sub>4</sub> |
|--------------|----------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----|----------------|----------------|
|              | h6       |                |                |                |                |                |                 |                 |     |                |                |
| <b>GKS04</b> | 25<br>30 | 72             | 79             | 76             | 2.5            | 150            | 148             | 154             | 142 | 122            | 26             |
| <b>GKS05</b> | 35       | 80             | 90             | 84             | 4.0            | 176            | 174             | 179             | 168 | 148            | 28             |
| <b>GKS06</b> | 40       | 90             | 100            | 94             | 5.0            | 202            | 200             | 204             | 194 | 164            | 30             |
| <b>GKS07</b> | 50       | 110            | 124            | 116            |                | 241            | 238             | 244             | 232 | 192            | 26             |
| <b>GKS09</b> | 65       | 141            | 159            | 147            |                | 288            | 285             | 287             | 278 | 228            | 30             |
| <b>GKS11</b> | 80       | 170            | 191            | 176            | 6.0            | 347            | 344             | 349             | 338 | 238            | 42             |
| <b>GKS14</b> | 100      | 215            | 253            | 221            | 7.0            | 418            | 415             | 421             | 407 | 307            | 55             |

- ▶ Output flange and hollow shaft with shrink disc (output version SAK) are not possible in the same location. For additional dimensions see output version H□□.
- ▶ Ensure that the strength of the machine shaft material is adequate in shrink disc designs.  
When using typical steels (e.g. C45, 42CrMo4), the torques listed in the selection tables can be used without restriction. Please consult us if you wish to use material that is considerably weaker. Medium surface roughness Rz must not exceed 15 µm (machining is sufficient).

6

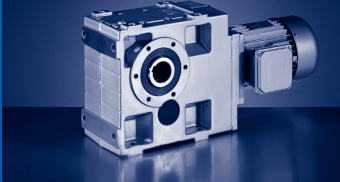


### Hoseproof hollow shaft cover



► Cover including gasket

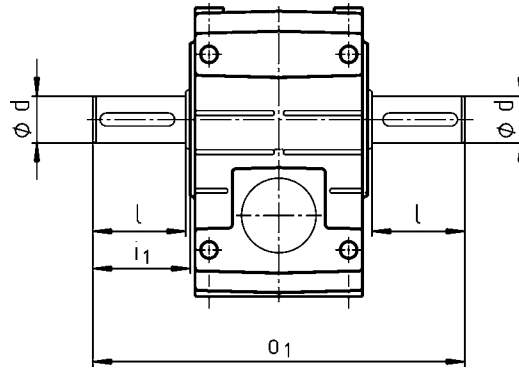
|       | $k_{11}$ | $k_{12}$ | $g_3$ |
|-------|----------|----------|-------|
| GKS04 | 9        |          |       |
| GKS05 | 10       |          |       |
| GKS06 | 11       |          |       |
| GKS07 |          |          |       |
| GKS09 |          | 54       | 159   |
| GKS11 |          | 67       | 191   |
| GKS14 |          | 80       | 253   |



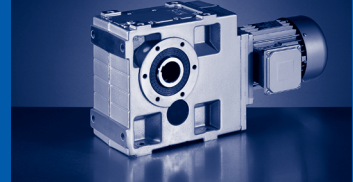
# GKS

GKS & [mm] - Additional dimensions

## Gearbox with 2nd output shaft end

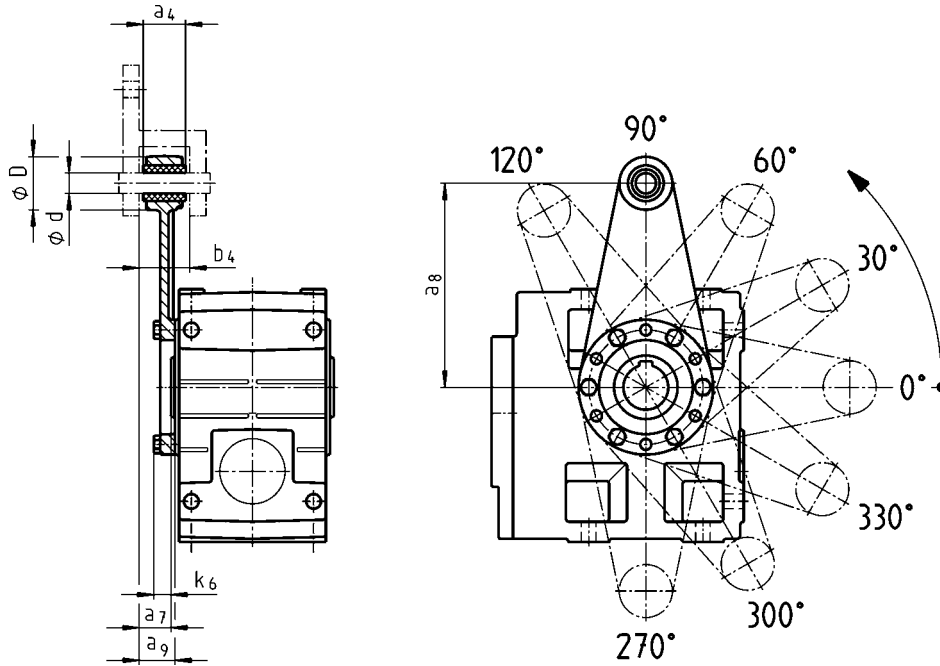


|       | d  | d   | l   | i <sub>1</sub> | o <sub>1</sub> |
|-------|----|-----|-----|----------------|----------------|
|       | k6 | m6  |     |                |                |
| GKS04 | 25 |     | 50  | 52.5           | 215            |
| GKS05 | 30 |     | 60  | 64.0           | 260            |
| GKS06 | 40 |     | 80  | 85.0           | 320            |
| GKS07 | 50 |     | 100 | 105.0          | 400            |
| GKS09 |    | 60  | 120 | 125.0          | 480            |
| GKS11 |    | 80  | 160 | 166.0          | 610            |
| GKS14 |    | 100 | 200 | 207.0          | 750            |

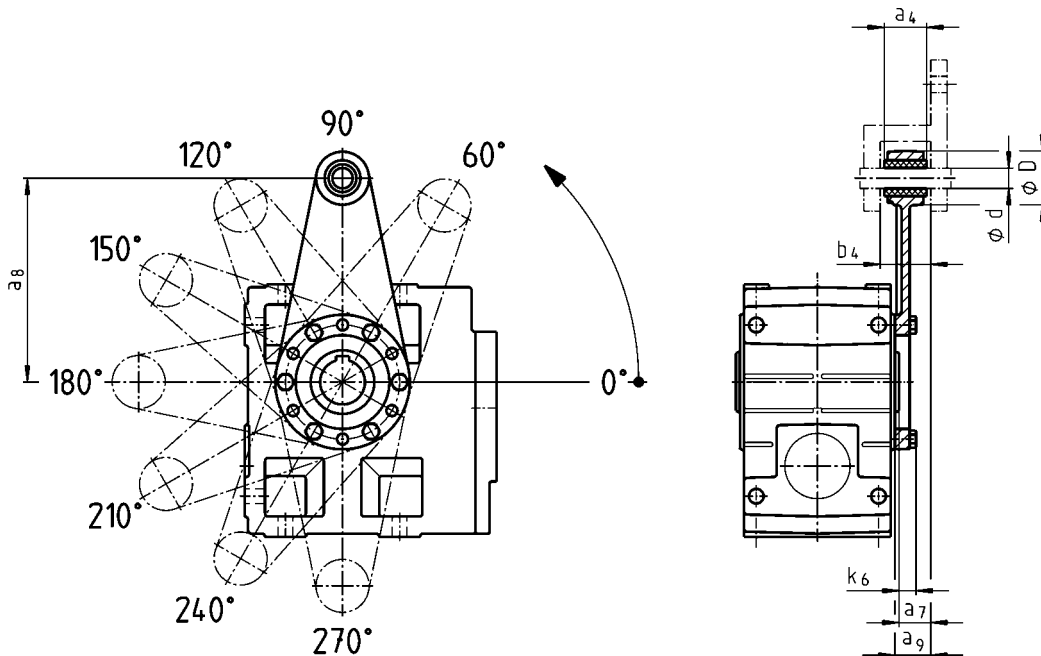


Torque plate on threaded pitch circle

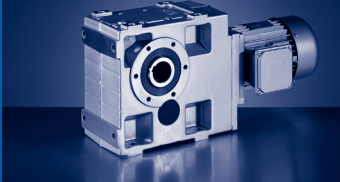
In position 3



In position 5

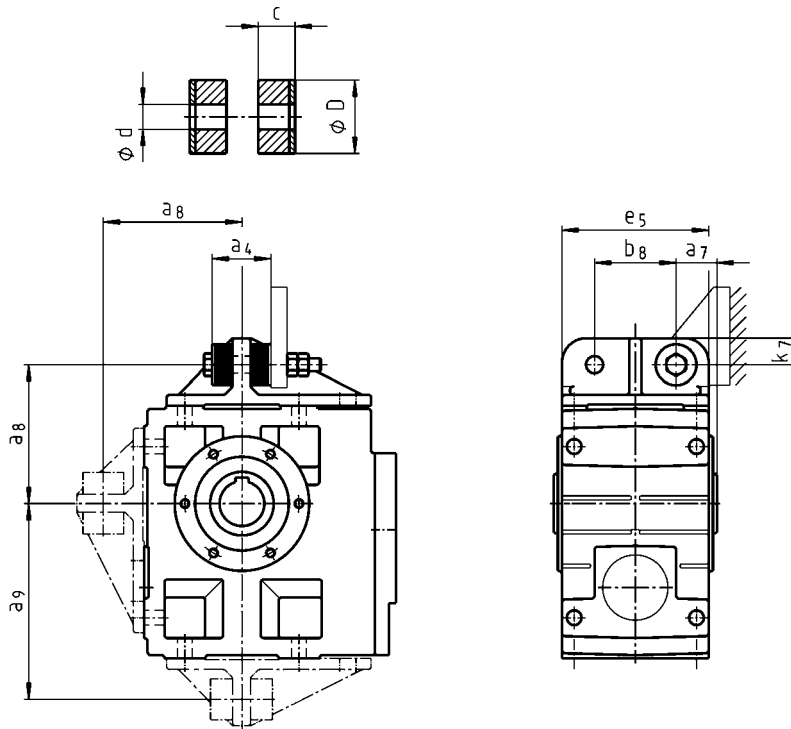


|       | a <sub>4</sub> | a <sub>7</sub> | a <sub>8</sub> | a <sub>9</sub> | b <sub>4</sub> | d  | D  | k <sub>6</sub> |
|-------|----------------|----------------|----------------|----------------|----------------|----|----|----------------|
| GKS04 | 30             | 24.0           | 130            | 26.5           | 34.5           | 12 | 35 | 16             |
| GKS05 | 34             | 23.5           | 160            | 27.5           | 38.5           | 16 | 45 | 15             |
| GKS06 | 40             | 28.0           | 200            | 33.0           | 44.5           | 20 | 50 | 18             |
| GKS07 | 46             | 32.5           | 250            | 37.5           | 50.5           | 25 | 65 | 21             |



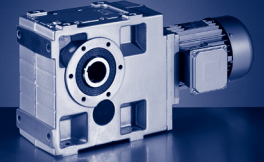
### Torque plate at housing foot

In position 2, 4 or 6

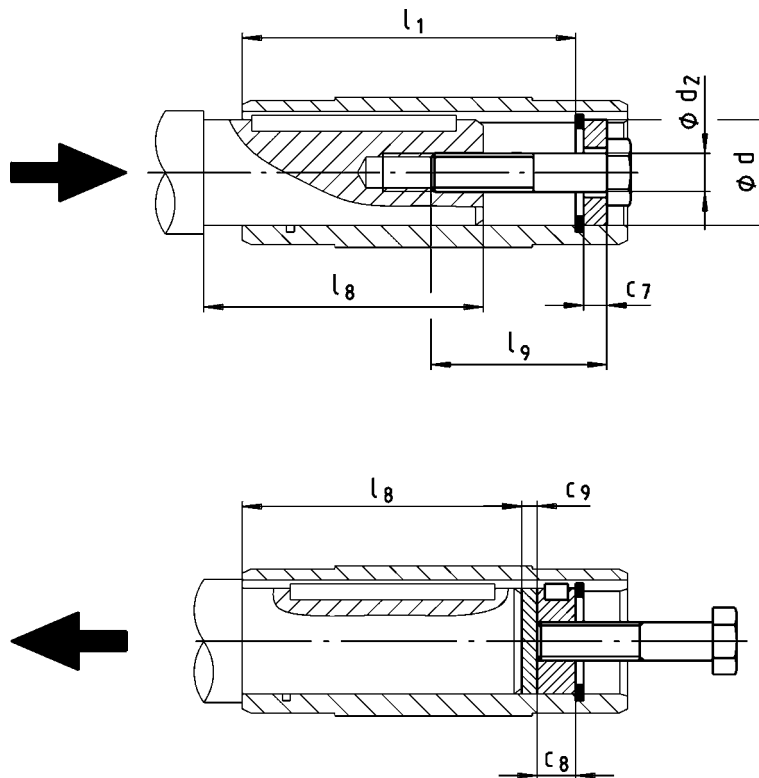


|              | a <sub>4</sub> | a <sub>7</sub> | a <sub>8</sub> | a <sub>9</sub> | b <sub>8</sub> | c    | d  | D   | e <sub>5</sub> | k <sub>7</sub> |
|--------------|----------------|----------------|----------------|----------------|----------------|------|----|-----|----------------|----------------|
| <b>GKS04</b> | 41             | 27.5           | 106            | 135.0          | 60             | 14.5 | 11 | 30  | 100            | 20             |
| <b>GKS05</b> | 45             | 35.0           | 115            | 160.0          | 70             | 15.0 | 13 | 40  | 127            | 25             |
| <b>GKS06</b> | 72             | 40.0           | 145            | 195.0          | 80             | 27.0 | 17 | 50  | 145            | 28             |
| <b>GKS07</b> | 78             | 50.0           | 170            | 240.0          | 100            | 28.0 | 21 | 60  | 180            | 35             |
| <b>GKS09</b> | 86             | 60.0           | 214            | 300.0          | 120            | 29.0 | 26 | 72  | 222            | 46             |
| <b>GKS11</b> | 94             | 72.5           | 260            | 375.0          | 145            | 30.0 | 33 | 92  | 270            | 55             |
| <b>GKS14</b> | 100            | 85.0           | 320            | 465.0          | 180            |      | 39 | 110 | 328            | 70             |

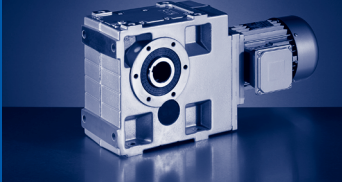




Mounting set for hollow shaft circlip - Proposed design for auxiliary tools

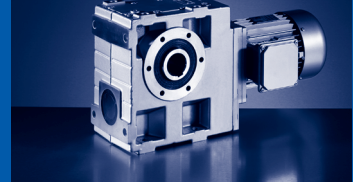


|       | d   | l <sub>1</sub> | d <sub>2</sub> | l <sub>9</sub> | c <sub>7</sub> | c <sub>8</sub> | c <sub>9</sub> | l <sub>8, max</sub> |
|-------|-----|----------------|----------------|----------------|----------------|----------------|----------------|---------------------|
|       | H7  |                |                |                |                |                |                |                     |
| GKS04 | 25  | 100            | M10            | 40             | 5              | 10             | 3              | 85                  |
|       | 30  |                |                |                | 6              |                |                |                     |
| GKS05 | 30  | 124            | M12            | 50             | 7              | 12             | 4              | 107                 |
|       | 35  |                |                |                | 8              |                |                |                     |
| GKS06 | 40  | 140            | M16            | 60             | 9              | 16             | 5              | 118                 |
|       | 45  |                |                |                | 10             |                |                |                     |
| GKS07 | 50  | 175            | M20            | 80             | 11             | 20             | 6              | 148                 |
|       | 55  |                |                |                | 13             |                |                |                     |
| GKS09 | 60  | 210            | M24            | 100            | 14             | 24             | 8              | 182                 |
|       | 70  |                |                |                | 16             |                |                |                     |
| GKS11 | 70  | 250            | M24            | 100            | 20             | 24             | 8              | 221                 |
|       | 80  |                |                |                | 20             |                |                |                     |
| GKS14 | 100 | 305            | M24            | 100            | 20             | 24             | 8              | 270                 |



## GKS

GKS & [mm] - Additional dimensions



## Permissible radial and axial forces at output

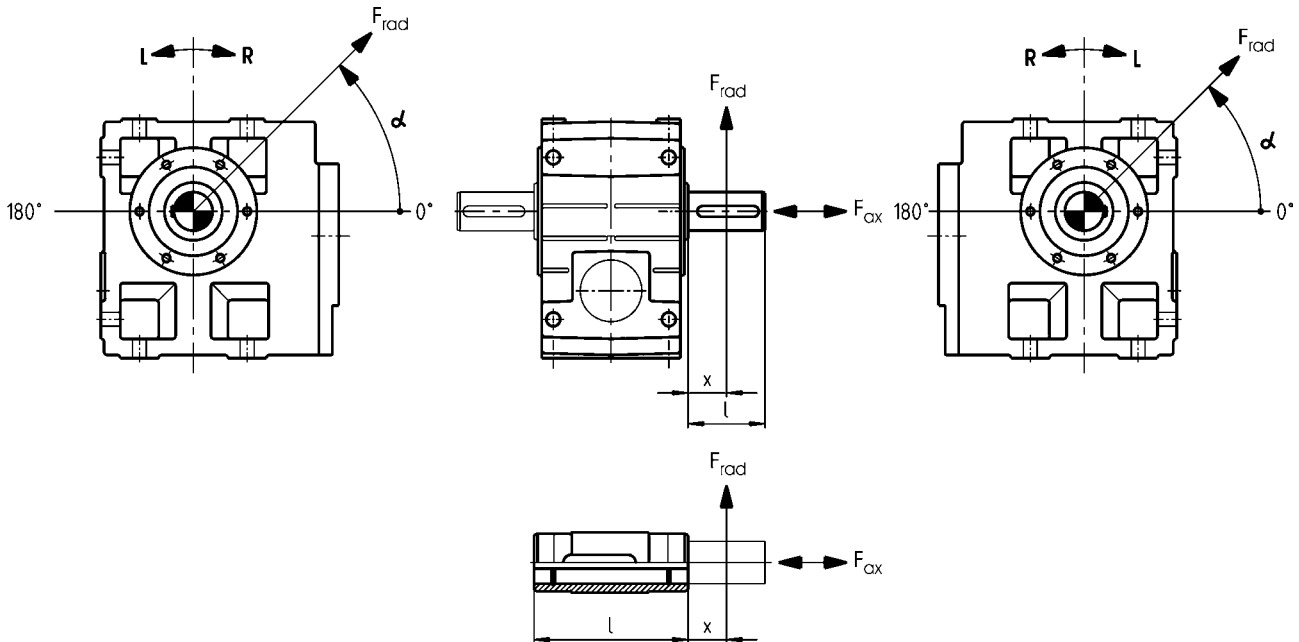
### Permissible radial force

$$F_{rad,per} = \min(f_w \times f_\alpha \times F_{rad,max}; f_w \times F_{rad,max} \text{ at } n_2 \leq 16 \text{ r/min})$$

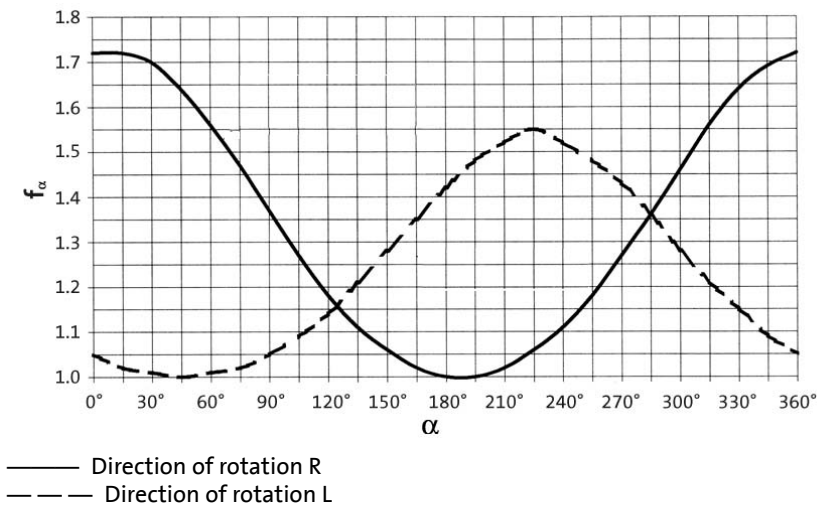
### Permissible axial force

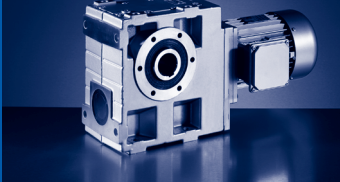
$$F_{ax,per} = F_{ax,max} \text{ if } F_{rad} = 0$$

If  $F_{rad}$  and  $F_{ax} \neq 0$ ; please contact Lenze.



### Effective direction factor $f_\alpha$ at output shaft

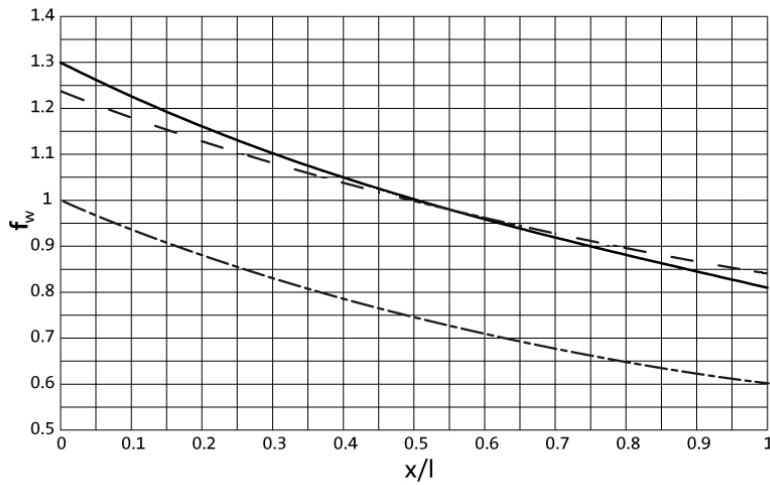




## GSS

### GSS [N] - forces

#### Additional load factor $f_w$ at output shaft



—— Solid shaft (V□□)

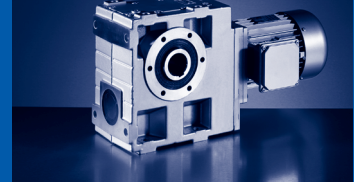
- - - Solid shaft with flange (V□K)

- · - Hollow shaft (H□□)

GSS□□-2/3□ H□□

| Size                                   | $n_2$ [r/min] |               |               |               |               |               |               |               |               |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Gearbox                                | 630           | 400           | 250           | 160           | 100           | 63            | 40            | 25            | ≤16           |
| <b>Max. radial force, Hollow shaft</b> |               |               |               |               |               |               |               |               |               |
|  | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ | $F_{rad,max}$ |
|  | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           |
| <b>GSS04</b>                           | 2800          | 3000          | 3800          | 4500          | 5300          | 6000          | 6000          | 6000          | 6000          |
| <b>GSS05</b>                           | 3000          | 3200          | 3600          | 4300          | 5100          | 6000          | 7000          | 7500          | 7500          |
| <b>GSS06</b>                           | 4400          | 4600          | 4800          | 5600          | 6600          | 7700          | 9100          | 10700         | 11500         |
| <b>GSS07</b>                           | 4600          | 5100          | 5600          | 6700          | 8200          | 10000         | 12100         | 14800         | 16000         |
| <b>Max. axial force, Hollow shaft</b>  |               |               |               |               |               |               |               |               |               |
|  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  | $F_{ax,max}$  |
|  | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           | [N]           |
| <b>GSS04</b>                           | 2200          | 2900          | 3700          | 4200          | 4900          | 5500          | 5500          | 5500          | 5500          |
| <b>GSS05</b>                           | 1600          | 2200          | 2800          | 3500          | 4400          | 5500          | 6000          | 6000          | 6000          |
| <b>GSS06</b>                           | 1900          | 2500          | 3200          | 4100          | 5200          | 6500          | 8200          | 9000          | 9000          |
| <b>GSS07</b>                           | 1800          | 2400          | 3100          | 4100          | 5500          | 7200          | 9500          | 12500         | 12500         |

- ▶ Application of force  $F_{rad}$ : at hollow shaft end face ( $x = 0$ )
- ▶  $F_{ax,max}$  only valid with  $F_{rad} = 0$
- ▶ Neither radial nor axial forces are permissible for the hollow shaft with shrink disc (S□□).



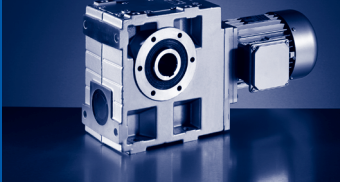
GSS□□-2/3□V□R

| Size   | n <sub>2</sub> [r/min] |                      |                      |                      |                      |                      |                      |                      |                      |
|--|------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Gearbox  | 630                    | 400                  | 250                  | 160                  | 100                  | 63                   | 40                   | 25                   | ≤16                  |
| <b>Max. radial force, Solid shaft without flange</b> |                        |                      |                      |                      |                      |                      |                      |                      |                      |
|  | F <sub>rad,max</sub>   | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> |
|  | [N]                    | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  |
| GSS04  | 2200                   | 2400                 | 3000                 | 3500                 | 4100                 | 4200                 | 4200                 | 4200                 | 4200                 |
| GSS05  | 2300                   | 2500                 | 2900                 | 3400                 | 4000                 | 4300                 | 4300                 | 4300                 | 4300                 |
| GSS06  | 3400                   | 3500                 | 3600                 | 4200                 | 5000                 | 5900                 | 6900                 | 8200                 | 8500                 |
| GSS07  | 3700                   | 4000                 | 4200                 | 5100                 | 6300                 | 7700                 | 9300                 | 11300                | 12000                |
| <b>Max. axial force, Solid shaft without flange</b>  |                        |                      |                      |                      |                      |                      |                      |                      |                      |
|  | F <sub>ax,max</sub>    | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  |
|  | [N]                    | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  |
| GSS04  | 2200                   | 2900                 | 3700                 | 4200                 | 4900                 | 5500                 | 5500                 | 5500                 | 5500                 |
| GSS05  | 1600                   | 2200                 | 2800                 | 3500                 | 4400                 | 5500                 | 6000                 | 6000                 | 6000                 |
| GSS06  | 1900                   | 2500                 | 3200                 | 4100                 | 5200                 | 6500                 | 8200                 | 9000                 | 9000                 |
| GSS07  | 1800                   | 2400                 | 3100                 | 4100                 | 5500                 | 7200                 | 9500                 | 12500                | 12500                |

GSS□□-2/3□V□K

| Size  | n <sub>2</sub> [r/min] |                      |                      |                      |                      |                      |                      |                      |                      |
|---|------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Gearbox   | 630                    | 400                  | 250                  | 160                  | 100                  | 63                   | 40                   | 25                   | ≤16                  |
| <b>Max. radial force, Solid shaft with flange</b> |                        |                      |                      |                      |                      |                      |                      |                      |                      |
|   | F <sub>rad,max</sub>   | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> | F <sub>rad,max</sub> |
|   | [N]                    | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  |
| GSS04   | 2750                   | 3000                 | 4100                 | 4400                 | 4700                 | 4700                 | 4700                 | 4700                 | 4700                 |
| GSS05   | 3450                   | 3750                 | 4900                 | 4900                 | 4900                 | 4900                 | 4900                 | 4900                 | 4900                 |
| GSS06   | 5100                   | 5250                 | 7000                 | 8100                 | 9400                 | 9400                 | 9400                 | 9400                 | 9400                 |
| GSS07   | 5500                   | 6000                 | 7900                 | 9100                 | 10600                | 12400                | 14000                | 14000                | 14000                |
| <b>Max. axial force, Solid shaft with flange</b>  |                        |                      |                      |                      |                      |                      |                      |                      |                      |
|   | F <sub>ax,max</sub>    | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  | F <sub>ax,max</sub>  |
|   | [N]                    | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  | [N]                  |
| GSS04   | 2100                   | 2800                 | 3500                 | 4000                 | 4200                 | 4200                 | 4200                 | 4200                 | 4200                 |
| GSS05   | 1500                   | 2000                 | 2500                 | 3100                 | 4000                 | 4900                 | 5500                 | 5500                 | 5500                 |
| GSS06   | 1600                   | 2200                 | 2800                 | 3500                 | 4500                 | 5700                 | 7300                 | 8800                 | 8800                 |
| GSS07   | 1400                   | 1900                 | 2400                 | 3200                 | 4300                 | 5900                 | 8000                 | 10000                | 10000                |

- ▶ Application of force F<sub>rad</sub>: centre of shaft journal (x = l/2)
- ▶ F<sub>ax,max</sub> only valid with F<sub>rad</sub> = 0



## GSS

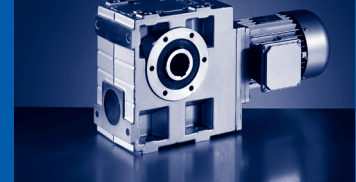
GSS [kgcm<sup>2</sup>] - moments of inertia

### GSS□□-2

- ▶ Moment of inertia (J) depending on ratio i

| Gearbox |   |                      | GSS04 | Gearbox |   |                      | GSS05 |
|---------|---|----------------------|-------|---------|---|----------------------|-------|
| 5.639   | J | [kgcm <sup>2</sup> ] | 1.120 | 5.639   | J | [kgcm <sup>2</sup> ] | 2.821 |
| 7.733   | J | [kgcm <sup>2</sup> ] | 0.652 | 7.733   | J | [kgcm <sup>2</sup> ] | 1.664 |
| 9.042   | J | [kgcm <sup>2</sup> ] | 0.809 | 9.042   | J | [kgcm <sup>2</sup> ] | 2.014 |
| 9.897   | J | [kgcm <sup>2</sup> ] | 0.430 | 9.897   | J | [kgcm <sup>2</sup> ] | 1.102 |
| 10.827  | J | [kgcm <sup>2</sup> ] | 0.368 | 10.827  | J | [kgcm <sup>2</sup> ] | 0.941 |
| 12.400  | J | [kgcm <sup>2</sup> ] | 0.487 | 12.400  | J | [kgcm <sup>2</sup> ] | 1.235 |
| 13.810  | J | [kgcm <sup>2</sup> ] | 0.247 | 13.810  | J | [kgcm <sup>2</sup> ] | 0.638 |
| 15.869  | J | [kgcm <sup>2</sup> ] | 0.329 | 15.869  | J | [kgcm <sup>2</sup> ] | 0.840 |
| 17.360  | J | [kgcm <sup>2</sup> ] | 0.284 | 17.360  | J | [kgcm <sup>2</sup> ] | 0.722 |
| 20.417  | J | [kgcm <sup>2</sup> ] | 0.673 | 20.417  | J | [kgcm <sup>2</sup> ] | 1.601 |
| 22.143  | J | [kgcm <sup>2</sup> ] | 0.195 | 22.143  | J | [kgcm <sup>2</sup> ] | 0.504 |
| 24.800  | J | [kgcm <sup>2</sup> ] | 0.420 | 24.800  | J | [kgcm <sup>2</sup> ] | 1.059 |
| 27.125  | J | [kgcm <sup>2</sup> ] | 0.145 | 27.125  | J | [kgcm <sup>2</sup> ] | 0.377 |
| 31.738  | J | [kgcm <sup>2</sup> ] | 0.288 | 31.738  | J | [kgcm <sup>2</sup> ] | 0.733 |
| 34.100  | J | [kgcm <sup>2</sup> ] | 0.096 | 35.306  | J | [kgcm <sup>2</sup> ] | 0.233 |
| 39.200  | J | [kgcm <sup>2</sup> ] | 0.247 | 39.200  | J | [kgcm <sup>2</sup> ] | 0.610 |
| 43.917  | J | [kgcm <sup>2</sup> ] | 0.064 | 43.917  | J | [kgcm <sup>2</sup> ] | 0.167 |
| 50.000  | J | [kgcm <sup>2</sup> ] | 0.173 | 50.000  | J | [kgcm <sup>2</sup> ] | 0.435 |
| 54.250  | J | [kgcm <sup>2</sup> ] | 0.131 | 54.250  | J | [kgcm <sup>2</sup> ] | 0.341 |
| 61.250  | J | [kgcm <sup>2</sup> ] | 0.130 | 61.250  | J | [kgcm <sup>2</sup> ] | 0.332 |
| 68.200  | J | [kgcm <sup>2</sup> ] | 0.087 | 70.611  | J | [kgcm <sup>2</sup> ] | 0.211 |
| 77.000  | J | [kgcm <sup>2</sup> ] | 0.086 | 79.722  | J | [kgcm <sup>2</sup> ] | 0.206 |
| 87.833  | J | [kgcm <sup>2</sup> ] | 0.059 | 87.833  | J | [kgcm <sup>2</sup> ] | 0.153 |
| 99.167  | J | [kgcm <sup>2</sup> ] | 0.058 | 99.167  | J | [kgcm <sup>2</sup> ] | 0.149 |
| 111.318 | J | [kgcm <sup>2</sup> ] | 0.039 | 113.667 | J | [kgcm <sup>2</sup> ] | 0.096 |
| 125.682 | J | [kgcm <sup>2</sup> ] | 0.038 | 128.333 | J | [kgcm <sup>2</sup> ] | 0.094 |
| 139.500 | J | [kgcm <sup>2</sup> ] | 0.027 | 137.950 | J | [kgcm <sup>2</sup> ] | 0.070 |
| 157.500 | J | [kgcm <sup>2</sup> ] | 0.026 | 155.750 | J | [kgcm <sup>2</sup> ] | 0.069 |
| 183.786 | J | [kgcm <sup>2</sup> ] | 0.016 | 176.313 | J | [kgcm <sup>2</sup> ] | 0.045 |
| 207.500 | J | [kgcm <sup>2</sup> ] | 0.016 | 199.063 | J | [kgcm <sup>2</sup> ] | 0.044 |

- ▶ The moments of inertia relate to the drive shaft of the gearbox.
- ▶ The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.

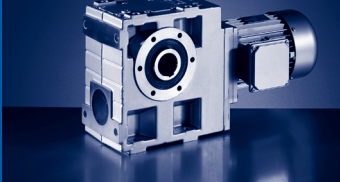


GSS□□-2

► Moment of inertia (J) depending on ratio i

| GSS06   |   |                      | GSS07   |   |                      |
|---------|---|----------------------|---------|---|----------------------|
| Gearbox |   |                      | Gearbox |   |                      |
| 5.833   | J | [kgcm <sup>2</sup> ] | 5.862   | J | [kgcm <sup>2</sup> ] |
| 8.000   | J | [kgcm <sup>2</sup> ] | 8.125   | J | [kgcm <sup>2</sup> ] |
| 9.042   | J | [kgcm <sup>2</sup> ] | 9.086   | J | [kgcm <sup>2</sup> ] |
| 10.238  | J | [kgcm <sup>2</sup> ] | 10.000  | J | [kgcm <sup>2</sup> ] |
| 11.200  | J | [kgcm <sup>2</sup> ] | 11.200  | J | [kgcm <sup>2</sup> ] |
| 12.400  | J | [kgcm <sup>2</sup> ] | 12.594  | J | [kgcm <sup>2</sup> ] |
| 14.286  | J | [kgcm <sup>2</sup> ] | 14.286  | J | [kgcm <sup>2</sup> ] |
| 15.869  | J | [kgcm <sup>2</sup> ] | 15.500  | J | [kgcm <sup>2</sup> ] |
| 17.360  | J | [kgcm <sup>2</sup> ] | 17.360  | J | [kgcm <sup>2</sup> ] |
| 20.417  | J | [kgcm <sup>2</sup> ] | 20.517  | J | [kgcm <sup>2</sup> ] |
| 22.143  | J | [kgcm <sup>2</sup> ] | 22.143  | J | [kgcm <sup>2</sup> ] |
| 24.800  | J | [kgcm <sup>2</sup> ] | 25.188  | J | [kgcm <sup>2</sup> ] |
| 27.125  | J | [kgcm <sup>2</sup> ] | 27.125  | J | [kgcm <sup>2</sup> ] |
| 31.738  | J | [kgcm <sup>2</sup> ] | 31.000  | J | [kgcm <sup>2</sup> ] |
| 35.306  | J | [kgcm <sup>2</sup> ] | 35.306  | J | [kgcm <sup>2</sup> ] |
| 39.200  | J | [kgcm <sup>2</sup> ] | 39.200  | J | [kgcm <sup>2</sup> ] |
| 43.917  | J | [kgcm <sup>2</sup> ] | 43.271  | J | [kgcm <sup>2</sup> ] |
| 50.000  | J | [kgcm <sup>2</sup> ] | 50.000  | J | [kgcm <sup>2</sup> ] |
| 54.250  | J | [kgcm <sup>2</sup> ] | 54.250  | J | [kgcm <sup>2</sup> ] |
| 61.250  | J | [kgcm <sup>2</sup> ] | 61.250  | J | [kgcm <sup>2</sup> ] |
| 70.611  | J | [kgcm <sup>2</sup> ] | 70.611  | J | [kgcm <sup>2</sup> ] |
| 79.722  | J | [kgcm <sup>2</sup> ] | 79.722  | J | [kgcm <sup>2</sup> ] |
| 87.833  | J | [kgcm <sup>2</sup> ] | 86.542  | J | [kgcm <sup>2</sup> ] |
| 99.167  | J | [kgcm <sup>2</sup> ] | 97.708  | J | [kgcm <sup>2</sup> ] |
| 113.667 | J | [kgcm <sup>2</sup> ] | 113.667 | J | [kgcm <sup>2</sup> ] |
| 128.333 | J | [kgcm <sup>2</sup> ] | 128.333 | J | [kgcm <sup>2</sup> ] |
| 137.950 | J | [kgcm <sup>2</sup> ] | 137.950 | J | [kgcm <sup>2</sup> ] |
| 155.750 | J | [kgcm <sup>2</sup> ] | 155.750 | J | [kgcm <sup>2</sup> ] |
| 174.375 | J | [kgcm <sup>2</sup> ] | 174.375 | J | [kgcm <sup>2</sup> ] |
| 196.875 | J | [kgcm <sup>2</sup> ] | 196.875 | J | [kgcm <sup>2</sup> ] |
|         |   | GSS06                |         |   | GSS07                |
|         |   | 6.966                |         |   | 21.357               |
|         |   | 4.219                |         |   | 12.754               |
|         |   | 5.541                |         |   | 17.436               |
|         |   | 2.811                |         |   | 9.140                |
|         |   | 2.393                |         |   | 7.498                |
|         |   | 3.461                |         |   | 10.713               |
|         |   | 1.630                |         |   | 4.837                |
|         |   | 2.348                |         |   | 7.792                |
|         |   | 2.006                |         |   | 6.424                |
|         |   | 4.172                |         |   | 13.579               |
|         |   | 1.392                |         |   | 4.177                |
|         |   | 3.056                |         |   | 9.590                |
|         |   | 1.039                |         |   | 3.130                |
|         |   | 2.101                |         |   | 7.051                |
|         |   | 0.660                |         |   | 1.955                |
|         |   | 1.635                |         |   | 5.368                |
|         |   | 0.475                |         |   | 1.433                |
|         |   | 1.164                |         |   | 3.527                |
|         |   | 0.955                |         |   | 2.888                |
|         |   | 0.887                |         |   | 2.698                |
|         |   | 0.610                |         |   | 1.812                |
|         |   | 0.570                |         |   | 1.700                |
|         |   | 0.443                |         |   | 1.338                |
|         |   | 0.417                |         |   | 1.263                |
|         |   | 0.276                |         |   | 0.833                |
|         |   | 0.260                |         |   | 0.789                |
|         |   | 0.201                |         |   | 0.609                |
|         |   | 0.191                |         |   | 0.579                |
|         |   | 0.130                |         |   | 0.391                |
|         |   | 0.123                |         |   | 0.373                |

- The moments of inertia relate to the drive shaft of the gearbox.
- The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.



## GSS

### GSS [kgcm<sup>2</sup>] - moments of inertia

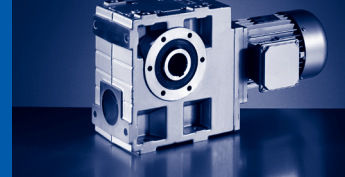
#### GSS□□-3

- ▶ Moment of inertia (J) depending on ratio i

| Gearbox  |   |                      | GSS05 | Gearbox  |   |                      | GSS06 |
|----------|---|----------------------|-------|----------|---|----------------------|-------|
| 125.476  | J | [kgcm <sup>2</sup> ] | 0.154 | 126.531  | J | [kgcm <sup>2</sup> ] | 0.310 |
| 153.708  | J | [kgcm <sup>2</sup> ] | 0.117 | 142.857  | J | [kgcm <sup>2</sup> ] | 0.298 |
| 193.233  | J | [kgcm <sup>2</sup> ] | 0.078 | 155.000  | J | [kgcm <sup>2</sup> ] | 0.271 |
| 222.133  | J | [kgcm <sup>2</sup> ] | 0.206 | 175.000  | J | [kgcm <sup>2</sup> ] | 0.263 |
| 250.952  | J | [kgcm <sup>2</sup> ] | 0.151 | 194.857  | J | [kgcm <sup>2</sup> ] | 0.144 |
| 283.333  | J | [kgcm <sup>2</sup> ] | 0.148 | 220.000  | J | [kgcm <sup>2</sup> ] | 0.139 |
| 307.417  | J | [kgcm <sup>2</sup> ] | 0.115 | 238.700  | J | [kgcm <sup>2</sup> ] | 0.128 |
| 347.083  | J | [kgcm <sup>2</sup> ] | 0.113 | 269.500  | J | [kgcm <sup>2</sup> ] | 0.124 |
| 386.467  | J | [kgcm <sup>2</sup> ] | 0.077 | 310.689  | J | [kgcm <sup>2</sup> ] | 0.112 |
| 436.333  | J | [kgcm <sup>2</sup> ] | 0.076 | 350.778  | J | [kgcm <sup>2</sup> ] | 0.110 |
| 497.722  | J | [kgcm <sup>2</sup> ] | 0.053 | 386.467  | J | [kgcm <sup>2</sup> ] | 0.103 |
| 561.944  | J | [kgcm <sup>2</sup> ] | 0.052 | 436.333  | J | [kgcm <sup>2</sup> ] | 0.102 |
| 630.803  | J | [kgcm <sup>2</sup> ] | 0.035 | 497.722  | J | [kgcm <sup>2</sup> ] | 0.069 |
| 712.197  | J | [kgcm <sup>2</sup> ] | 0.034 | 561.944  | J | [kgcm <sup>2</sup> ] | 0.068 |
| 790.500  | J | [kgcm <sup>2</sup> ] | 0.024 | 630.803  | J | [kgcm <sup>2</sup> ] | 0.045 |
| 892.500  | J | [kgcm <sup>2</sup> ] | 0.024 | 712.197  | J | [kgcm <sup>2</sup> ] | 0.044 |
| 1041.452 | J | [kgcm <sup>2</sup> ] | 0.015 | 816.333  | J | [kgcm <sup>2</sup> ] | 0.042 |
| 1175.833 | J | [kgcm <sup>2</sup> ] | 0.015 | 921.667  | J | [kgcm <sup>2</sup> ] | 0.042 |
|          |   |                      |       | 1023.000 | J | [kgcm <sup>2</sup> ] | 0.029 |
|          |   |                      |       | 1155.000 | J | [kgcm <sup>2</sup> ] | 0.029 |
|          |   |                      |       | 1241.550 | J | [kgcm <sup>2</sup> ] | 0.028 |
|          |   |                      |       | 1401.750 | J | [kgcm <sup>2</sup> ] | 0.028 |
|          |   |                      |       | 1635.693 | J | [kgcm <sup>2</sup> ] | 0.017 |
|          |   |                      |       | 1846.750 | J | [kgcm <sup>2</sup> ] | 0.017 |

- ▶ The moments of inertia relate to the drive shaft of the gearbox.
- ▶ The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.



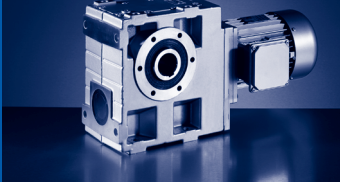


## GSS□□-3

- ▶ Moment of inertia (J) depending on ratio i

| Gearbox  |   |                      | GSS07 |
|----------|---|----------------------|-------|
| 126.531  | J | [kgcm <sup>2</sup> ] | 0.857 |
| 142.857  | J | [kgcm <sup>2</sup> ] | 0.822 |
| 155.000  | J | [kgcm <sup>2</sup> ] | 0.742 |
| 175.000  | J | [kgcm <sup>2</sup> ] | 0.719 |
| 201.746  | J | [kgcm <sup>2</sup> ] | 0.372 |
| 227.778  | J | [kgcm <sup>2</sup> ] | 0.358 |
| 247.139  | J | [kgcm <sup>2</sup> ] | 0.327 |
| 279.028  | J | [kgcm <sup>2</sup> ] | 0.317 |
| 321.673  | J | [kgcm <sup>2</sup> ] | 0.281 |
| 363.179  | J | [kgcm <sup>2</sup> ] | 0.276 |
| 394.245  | J | [kgcm <sup>2</sup> ] | 0.258 |
| 445.116  | J | [kgcm <sup>2</sup> ] | 0.255 |
| 490.403  | J | [kgcm <sup>2</sup> ] | 0.183 |
| 553.681  | J | [kgcm <sup>2</sup> ] | 0.181 |
| 634.639  | J | [kgcm <sup>2</sup> ] | 0.114 |
| 716.528  | J | [kgcm <sup>2</sup> ] | 0.113 |
| 833.556  | J | [kgcm <sup>2</sup> ] | 0.105 |
| 941.111  | J | [kgcm <sup>2</sup> ] | 0.105 |
| 1011.633 | J | [kgcm <sup>2</sup> ] | 0.076 |
| 1142.167 | J | [kgcm <sup>2</sup> ] | 0.076 |
| 1227.755 | J | [kgcm <sup>2</sup> ] | 0.074 |
| 1386.175 | J | [kgcm <sup>2</sup> ] | 0.073 |
| 1569.181 | J | [kgcm <sup>2</sup> ] | 0.047 |
| 1771.656 | J | [kgcm <sup>2</sup> ] | 0.047 |

- ▶ The moments of inertia relate to the drive shaft of the gearbox.
- ▶ The total moment of inertia is calculated by adding the values of gearbox, motor and accessories.



## GSS

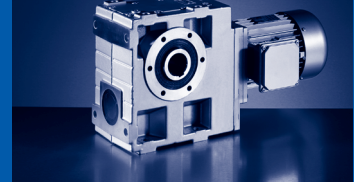
### GSS [ $\eta$ ] - efficiency

- ▶ During start-up, the start-up efficiency  $\eta_a$  of a helical-worm gearbox is lower than its operative efficiency at rated speed. **The start-up efficiency  $\eta_a$  must therefore always be considered when starting under load.**

## GSS□□-2

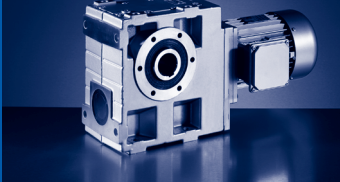
### GSS04-2

|         |          |      | $n_2$ [r/min] |      |      |      |      |      |      |      |      |      |      |      |      |
|---------|----------|------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|
|         |          |      | 10            | 16   | 25   | 32   | 40   | 63   | 100  | 160  | 250  | 400  | 630  | 800  |      |
| 5.639   | $\eta_a$ | 0.71 | $\eta_{c=1}$  | 0.83 | 0.86 | 0.88 | 0.89 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.89 | 0.89 |
| 7.733   | $\eta_a$ | 0.71 | $\eta_{c=1}$  | 0.83 | 0.86 | 0.88 | 0.89 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.89 | 0.89 |
| 9.042   | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.81 | 0.84 | 0.86 | 0.87 | 0.87 | 0.88 | 0.88 | 0.87 | 0.87 | 0.87 | 0.87 |      |
| 9.897   | $\eta_a$ | 0.71 | $\eta_{c=1}$  | 0.83 | 0.86 | 0.88 | 0.89 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.89 | 0.89 |
| 10.827  | $\eta_a$ | 0.71 | $\eta_{c=1}$  | 0.83 | 0.86 | 0.88 | 0.89 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.89 | 0.89 |
| 12.400  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.81 | 0.84 | 0.86 | 0.87 | 0.87 | 0.88 | 0.88 | 0.87 | 0.87 | 0.87 | 0.87 |      |
| 13.810  | $\eta_a$ | 0.71 | $\eta_{c=1}$  | 0.83 | 0.86 | 0.88 | 0.89 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.89 | 0.89 |
| 15.869  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.81 | 0.84 | 0.86 | 0.87 | 0.87 | 0.88 | 0.88 | 0.87 | 0.87 | 0.87 | 0.87 |      |
| 17.360  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.81 | 0.84 | 0.86 | 0.87 | 0.87 | 0.88 | 0.88 | 0.87 | 0.87 | 0.87 | 0.87 |      |
| 20.417  | $\eta_a$ | 0.55 | $\eta_{c=1}$  | 0.76 | 0.78 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.78 | 0.78 |      |      |      |
| 22.143  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.81 | 0.84 | 0.86 | 0.87 | 0.87 | 0.88 | 0.88 | 0.87 | 0.87 | 0.87 | 0.87 |      |
| 24.800  | $\eta_a$ | 0.56 | $\eta_{c=1}$  | 0.77 | 0.79 | 0.80 | 0.81 | 0.81 | 0.81 | 0.80 | 0.80 | 0.79 |      |      |      |
| 27.125  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.81 | 0.84 | 0.86 | 0.87 | 0.87 | 0.88 | 0.88 | 0.87 | 0.87 | 0.87 | 0.87 |      |
| 31.738  | $\eta_a$ | 0.56 | $\eta_{c=1}$  | 0.77 | 0.79 | 0.80 | 0.81 | 0.81 | 0.81 | 0.80 | 0.80 | 0.79 |      |      |      |
| 34.100  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.81 | 0.84 | 0.86 | 0.87 | 0.87 | 0.88 | 0.88 | 0.87 | 0.87 | 0.87 | 0.87 |      |
| 39.200  | $\eta_a$ | 0.55 | $\eta_{c=1}$  | 0.76 | 0.78 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.78 | 0.78 |      |      |      |
| 43.917  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.81 | 0.84 | 0.86 | 0.87 | 0.87 | 0.88 | 0.88 | 0.87 | 0.87 | 0.87 | 0.87 |      |
| 50.000  | $\eta_a$ | 0.55 | $\eta_{c=1}$  | 0.76 | 0.78 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.78 | 0.78 |      |      |      |
| 54.250  | $\eta_a$ | 0.56 | $\eta_{c=1}$  | 0.77 | 0.79 | 0.80 | 0.81 | 0.81 | 0.81 | 0.80 | 0.80 | 0.79 |      |      |      |
| 61.250  | $\eta_a$ | 0.55 | $\eta_{c=1}$  | 0.76 | 0.78 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.78 | 0.78 |      |      |      |
| 68.200  | $\eta_a$ | 0.56 | $\eta_{c=1}$  | 0.77 | 0.79 | 0.80 | 0.81 | 0.81 | 0.81 | 0.80 | 0.80 | 0.79 |      |      |      |
| 77.000  | $\eta_a$ | 0.55 | $\eta_{c=1}$  | 0.76 | 0.78 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.78 | 0.78 |      |      |      |
| 87.833  | $\eta_a$ | 0.56 | $\eta_{c=1}$  | 0.77 | 0.79 | 0.80 | 0.81 | 0.81 | 0.81 | 0.80 | 0.80 | 0.79 |      |      |      |
| 99.167  | $\eta_a$ | 0.55 | $\eta_{c=1}$  | 0.76 | 0.78 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.78 | 0.78 |      |      |      |
| 111.318 | $\eta_a$ | 0.56 | $\eta_{c=1}$  | 0.77 | 0.79 | 0.80 | 0.81 | 0.81 | 0.81 | 0.80 | 0.80 | 0.79 |      |      |      |
| 125.682 | $\eta_a$ | 0.55 | $\eta_{c=1}$  | 0.76 | 0.78 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.78 | 0.78 |      |      |      |
| 139.500 | $\eta_a$ | 0.56 | $\eta_{c=1}$  | 0.77 | 0.79 | 0.80 | 0.81 | 0.81 | 0.81 | 0.80 | 0.80 | 0.79 |      |      |      |
| 157.500 | $\eta_a$ | 0.55 | $\eta_{c=1}$  | 0.76 | 0.78 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.78 | 0.78 |      |      |      |
| 183.786 | $\eta_a$ | 0.56 | $\eta_{c=1}$  | 0.77 | 0.79 | 0.80 | 0.81 | 0.81 | 0.81 | 0.80 | 0.80 | 0.79 |      |      |      |
| 207.500 | $\eta_a$ | 0.55 | $\eta_{c=1}$  | 0.76 | 0.78 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.78 | 0.78 |      |      |      |



GSS05-2

|         |          |      | $n_2$ [r/min] |      |      |      |      |      |      |      |      |      |      |      |      |
|---------|----------|------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|
|         |          |      | 10            | 16   | 25   | 32   | 40   | 63   | 100  | 160  | 250  | 400  | 630  | 800  |      |
| 5.639   | $\eta_a$ | 0.71 | $\eta_{c=1}$  | 0.85 | 0.87 | 0.89 | 0.90 | 0.90 | 0.91 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 |
| 7.733   | $\eta_a$ | 0.71 | $\eta_{c=1}$  | 0.85 | 0.87 | 0.89 | 0.90 | 0.90 | 0.91 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 |
| 9.042   | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.83 | 0.86 | 0.87 | 0.88 | 0.88 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.88 |      |
| 9.897   | $\eta_a$ | 0.71 | $\eta_{c=1}$  | 0.85 | 0.87 | 0.89 | 0.90 | 0.90 | 0.91 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 |
| 10.827  | $\eta_a$ | 0.71 | $\eta_{c=1}$  | 0.85 | 0.87 | 0.89 | 0.90 | 0.90 | 0.91 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 |
| 12.400  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.83 | 0.86 | 0.87 | 0.88 | 0.88 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.88 |      |
| 13.810  | $\eta_a$ | 0.71 | $\eta_{c=1}$  | 0.85 | 0.87 | 0.89 | 0.90 | 0.90 | 0.91 | 0.91 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 |
| 15.869  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.83 | 0.86 | 0.87 | 0.88 | 0.88 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.88 |      |
| 17.360  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.83 | 0.86 | 0.87 | 0.88 | 0.88 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.88 |      |
| 20.417  | $\eta_a$ | 0.55 | $\eta_{c=1}$  | 0.79 | 0.80 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |      |      |      |
| 22.143  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.83 | 0.86 | 0.87 | 0.88 | 0.88 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.88 |      |
| 24.800  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.79 | 0.81 | 0.82 | 0.82 | 0.83 | 0.83 | 0.82 | 0.82 | 0.82 |      |      |      |
| 27.125  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.83 | 0.86 | 0.87 | 0.88 | 0.88 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.88 |      |
| 31.738  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.79 | 0.81 | 0.82 | 0.82 | 0.83 | 0.83 | 0.82 | 0.82 | 0.82 |      |      |      |
| 35.306  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.83 | 0.86 | 0.87 | 0.88 | 0.88 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.88 |      |
| 39.200  | $\eta_a$ | 0.55 | $\eta_{c=1}$  | 0.79 | 0.80 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |      |      |      |
| 43.917  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.83 | 0.86 | 0.87 | 0.88 | 0.88 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.88 |      |
| 50.000  | $\eta_a$ | 0.55 | $\eta_{c=1}$  | 0.79 | 0.80 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |      |      |      |
| 54.250  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.79 | 0.81 | 0.82 | 0.82 | 0.83 | 0.83 | 0.82 | 0.82 | 0.82 |      |      |      |
| 61.250  | $\eta_a$ | 0.55 | $\eta_{c=1}$  | 0.79 | 0.80 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |      |      |      |
| 70.611  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.79 | 0.81 | 0.82 | 0.82 | 0.83 | 0.83 | 0.82 | 0.82 | 0.82 |      |      |      |
| 79.722  | $\eta_a$ | 0.55 | $\eta_{c=1}$  | 0.79 | 0.80 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |      |      |      |
| 87.833  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.79 | 0.81 | 0.82 | 0.82 | 0.83 | 0.83 | 0.82 | 0.82 | 0.82 |      |      |      |
| 99.167  | $\eta_a$ | 0.55 | $\eta_{c=1}$  | 0.79 | 0.80 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |      |      |      |
| 113.667 | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.79 | 0.81 | 0.82 | 0.82 | 0.83 | 0.83 | 0.82 | 0.82 | 0.82 |      |      |      |
| 128.333 | $\eta_a$ | 0.55 | $\eta_{c=1}$  | 0.79 | 0.80 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |      |      |      |
| 137.950 | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.79 | 0.81 | 0.82 | 0.82 | 0.83 | 0.83 | 0.82 | 0.82 | 0.82 |      |      |      |
| 155.750 | $\eta_a$ | 0.55 | $\eta_{c=1}$  | 0.79 | 0.80 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |      |      |      |
| 176.313 | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.79 | 0.81 | 0.82 | 0.82 | 0.83 | 0.83 | 0.82 | 0.82 | 0.82 |      |      |      |
| 199.063 | $\eta_a$ | 0.55 | $\eta_{c=1}$  | 0.79 | 0.80 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |      |      |      |

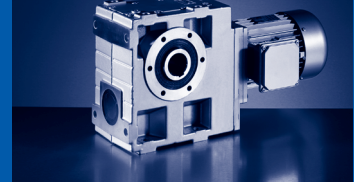


# GSS

GSS [ $\eta$ ] - efficiency

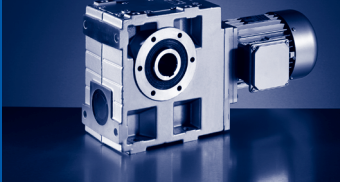
## GSS06-2

|         |          |      | $n_2$ [r/min] |      |      |      |      |      |      |      |      |      |      |      |      |
|---------|----------|------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|
|         |          |      | 10            | 16   | 25   | 32   | 40   | 63   | 100  | 160  | 250  | 400  | 630  | 800  |      |
| 5.833   | $\eta_a$ | 0.72 | $\eta_{c=1}$  | 0.87 | 0.89 | 0.90 | 0.91 | 0.91 | 0.91 | 0.92 | 0.92 | 0.92 | 0.91 | 0.91 | 0.91 |
| 8.000   | $\eta_a$ | 0.72 | $\eta_{c=1}$  | 0.87 | 0.89 | 0.90 | 0.91 | 0.91 | 0.91 | 0.92 | 0.92 | 0.92 | 0.91 | 0.91 | 0.91 |
| 9.042   | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.85 | 0.87 | 0.88 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |      |
| 10.238  | $\eta_a$ | 0.72 | $\eta_{c=1}$  | 0.87 | 0.89 | 0.90 | 0.91 | 0.91 | 0.91 | 0.92 | 0.92 | 0.92 | 0.91 | 0.91 | 0.91 |
| 11.200  | $\eta_a$ | 0.72 | $\eta_{c=1}$  | 0.87 | 0.89 | 0.90 | 0.91 | 0.91 | 0.91 | 0.92 | 0.92 | 0.92 | 0.91 | 0.91 | 0.91 |
| 12.400  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.85 | 0.87 | 0.88 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.80 |
| 14.286  | $\eta_a$ | 0.72 | $\eta_{c=1}$  | 0.89 | 0.90 | 0.91 | 0.91 | 0.91 | 0.92 | 0.92 | 0.92 | 0.91 | 0.91 | 0.91 |      |
| 15.869  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.85 | 0.87 | 0.88 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |      |
| 17.360  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.85 | 0.87 | 0.88 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |      |
| 20.417  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 22.143  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.85 | 0.87 | 0.88 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |      |
| 24.800  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 27.125  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.85 | 0.87 | 0.88 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |      |
| 31.738  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 35.306  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.85 | 0.87 | 0.88 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |      |
| 39.200  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 43.917  | $\eta_a$ | 0.67 | $\eta_{c=1}$  | 0.85 | 0.87 | 0.88 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |      |
| 50.000  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 54.250  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 61.250  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 70.611  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 79.722  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 87.833  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 99.167  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 113.667 | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 128.333 | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 137.950 | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 155.750 | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 174.375 | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 196.875 | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |



GSS07-2

|         |          |      | $n_2$ [r/min] |      |      |      |      |      |      |      |      |      |      |      |
|---------|----------|------|---------------|------|------|------|------|------|------|------|------|------|------|------|
|         |          |      | 10            | 16   | 25   | 32   | 40   | 63   | 100  | 160  | 250  | 400  | 630  | 800  |
| 5.862   | $\eta_a$ | 0.74 | $\eta_{c=1}$  | 0.89 | 0.91 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| 8.125   | $\eta_a$ | 0.74 | $\eta_{c=1}$  | 0.89 | 0.91 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| 9.086   | $\eta_a$ | 0.69 | $\eta_{c=1}$  | 0.88 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |      |
| 10.000  | $\eta_a$ | 0.74 | $\eta_{c=1}$  | 0.89 | 0.91 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| 11.200  | $\eta_a$ | 0.74 | $\eta_{c=1}$  | 0.89 | 0.91 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| 12.594  | $\eta_a$ | 0.69 | $\eta_{c=1}$  | 0.88 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |      |
| 14.286  | $\eta_a$ | 0.74 | $\eta_{c=1}$  | 0.89 | 0.91 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| 15.500  | $\eta_a$ | 0.69 | $\eta_{c=1}$  | 0.88 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |      |
| 17.360  | $\eta_a$ | 0.69 | $\eta_{c=1}$  | 0.88 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |      |
| 20.517  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |      |      |      |
| 22.143  | $\eta_a$ | 0.69 | $\eta_{c=1}$  | 0.88 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |      |
| 25.188  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |      |      |      |
| 27.125  | $\eta_a$ | 0.69 | $\eta_{c=1}$  | 0.88 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |      |
| 31.000  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |      |      |      |
| 35.306  | $\eta_a$ | 0.69 | $\eta_{c=1}$  | 0.88 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |      |
| 39.200  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |      |      |      |
| 43.271  | $\eta_a$ | 0.69 | $\eta_{c=1}$  | 0.88 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |      |
| 50.000  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |      |      |      |
| 54.250  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |      |      |      |
| 61.250  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |      |      |      |
| 70.611  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |      |      |      |
| 79.722  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |      |      |      |
| 86.542  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |      |      |      |
| 97.708  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |      |      |      |
| 113.667 | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |      |      |      |
| 128.333 | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |      |      |      |
| 137.950 | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |      |      |      |
| 155.750 | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |      |      |      |
| 174.375 | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |      |      |      |
| 196.875 | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |      |      |      |



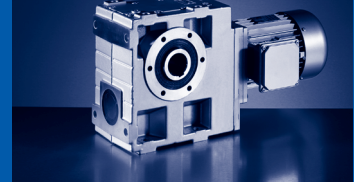
# GSS

GSS [ $\eta$ ] - efficiency

## GSS□□-3

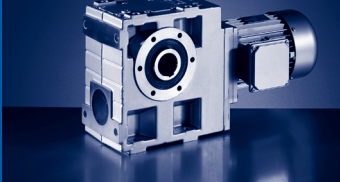
### GSS05-3

|         |          |      |              | $n_2$ [r/min] |      |      |      |      |      |      |      |      |      |      |
|---------|----------|------|--------------|---------------|------|------|------|------|------|------|------|------|------|------|
|         |          |      |              | 10            | 16   | 25   | 32   | 40   | 63   | 100  | 160  | 250  | 400  | 630  |
| 125.476 | $\eta_a$ | 0.67 | $\eta_{c=1}$ | 0.83          | 0.86 | 0.87 | 0.88 | 0.88 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.88 |
| 153.708 | $\eta_a$ | 0.67 | $\eta_{c=1}$ | 0.83          | 0.86 | 0.87 | 0.88 | 0.88 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.88 |
| 193.233 | $\eta_a$ | 0.67 | $\eta_{c=1}$ | 0.83          | 0.86 | 0.87 | 0.88 | 0.88 | 0.89 | 0.89 | 0.88 | 0.88 | 0.88 | 0.88 |
| 222.133 | $\eta_a$ | 0.55 | $\eta_{c=1}$ | 0.79          | 0.80 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |      |      |
| 250.952 | $\eta_a$ | 0.57 | $\eta_{c=1}$ | 0.79          | 0.81 | 0.82 | 0.82 | 0.83 | 0.83 | 0.82 | 0.82 | 0.82 |      |      |
| 283.333 | $\eta_a$ | 0.55 | $\eta_{c=1}$ | 0.79          | 0.80 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |      |      |
| 307.417 | $\eta_a$ | 0.57 | $\eta_{c=1}$ | 0.79          | 0.81 | 0.82 | 0.82 | 0.83 | 0.83 | 0.82 | 0.82 | 0.82 |      |      |
| 347.083 | $\eta_a$ | 0.55 | $\eta_{c=1}$ | 0.79          | 0.80 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |      |      |
| 386.467 | $\eta_a$ | 0.57 | $\eta_{c=1}$ | 0.79          | 0.81 | 0.82 | 0.82 | 0.83 | 0.83 | 0.82 | 0.82 | 0.82 |      |      |
| 436.333 | $\eta_a$ | 0.55 | $\eta_{c=1}$ | 0.79          | 0.80 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |      |      |
| 497.722 | $\eta_a$ | 0.57 | $\eta_{c=1}$ | 0.79          | 0.81 | 0.82 | 0.82 | 0.83 | 0.83 | 0.82 | 0.82 | 0.82 |      |      |
| 561.945 | $\eta_a$ | 0.55 | $\eta_{c=1}$ | 0.79          | 0.80 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |      |      |
| 630.803 | $\eta_a$ | 0.57 | $\eta_{c=1}$ | 0.79          | 0.81 | 0.82 | 0.82 | 0.83 | 0.83 | 0.82 | 0.82 | 0.82 |      |      |
| 712.197 | $\eta_a$ | 0.55 | $\eta_{c=1}$ | 0.79          | 0.80 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |      |      |



GSS06-3

|          |          |      | $n_2$ [r/min] |      |      |      |      |      |      |      |      |      |      |      |      |
|----------|----------|------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|
|          |          |      | 10            | 16   | 25   | 32   | 40   | 63   | 100  | 160  | 250  | 400  | 630  | 800  |      |
| 126.531  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.91 | 0.91 | 0.91 |
| 142.857  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 155.000  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 175.000  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 194.857  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 220.000  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 238.700  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 269.500  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 310.689  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 350.778  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 386.467  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 436.333  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 497.722  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 561.945  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 630.803  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 712.197  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 816.333  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 921.667  | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 1023.000 | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 1155.000 | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 1241.550 | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 1401.750 | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 1635.693 | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |
| 1846.750 | $\eta_a$ | 0.57 | $\eta_{c=1}$  | 0.81 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |      |      |      |



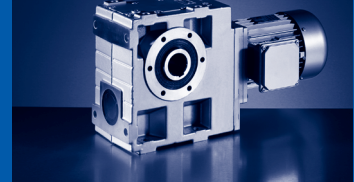
# GSS

GSS [ $\eta$ ] - efficiency

## GSS07-3

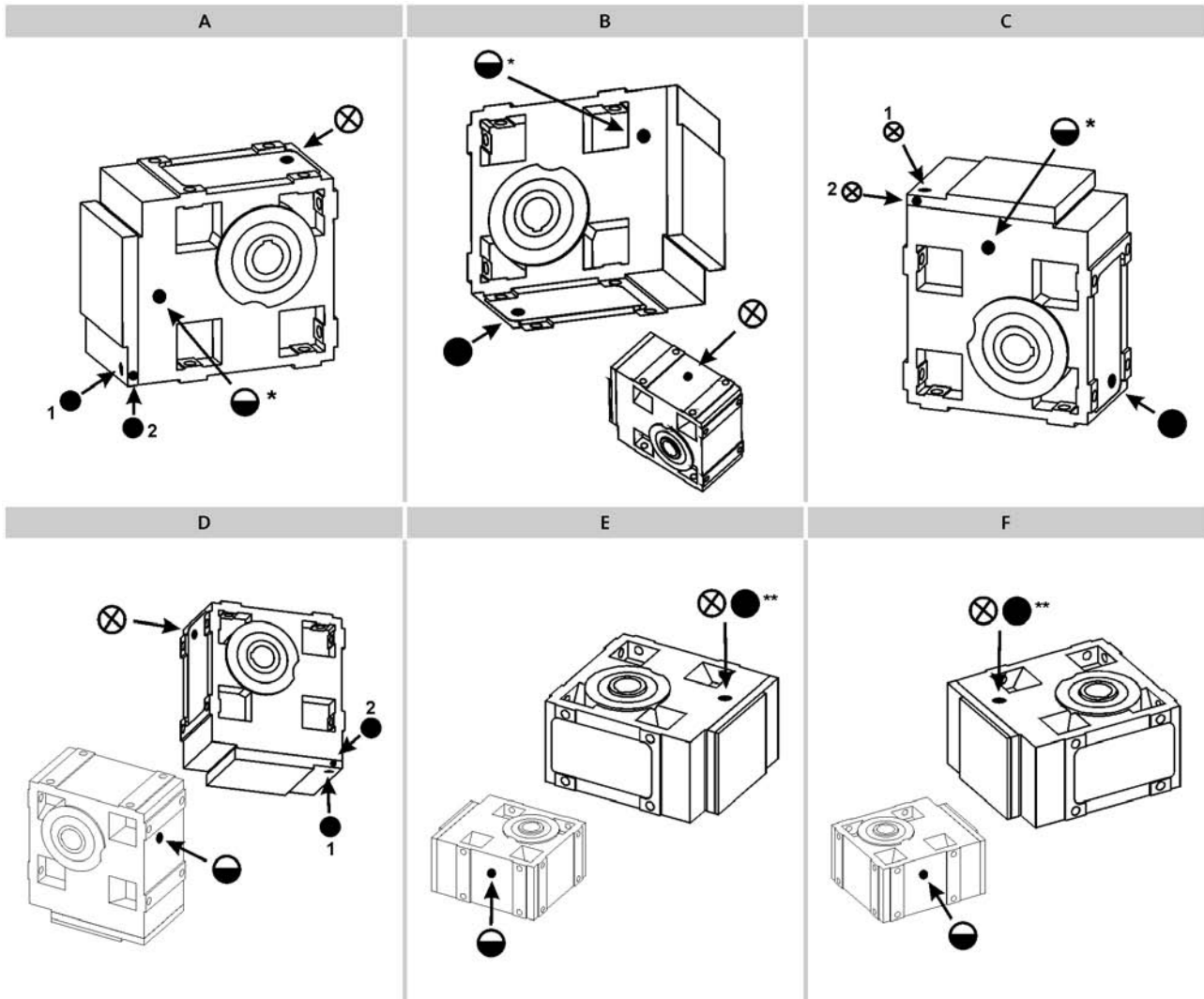
|          |          |      | $n_2$ [r/min] |      |      |      |      |      |      |      |      |      |      |
|----------|----------|------|---------------|------|------|------|------|------|------|------|------|------|------|
|          |          |      | 10            | 16   | 25   | 32   | 40   | 63   | 100  | 160  | 250  |      |      |
| 126.531  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 142.857  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 155.000  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 175.000  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 201.746  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 227.778  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 247.139  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 279.028  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 321.673  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 363.179  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 394.245  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 445.116  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 490.403  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 553.681  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 634.639  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 716.528  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 833.556  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 941.111  | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 1011.633 | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 1142.167 | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 1227.755 | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 1386.175 | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 1569.181 | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| 1771.656 | $\eta_a$ | 0.60 | $\eta_{c=1}$  | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |





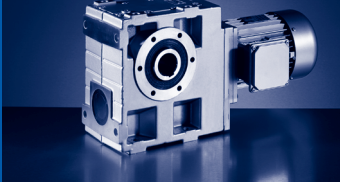
## Position of ventilation, sealing elements and oil level check

GSS05...07-2



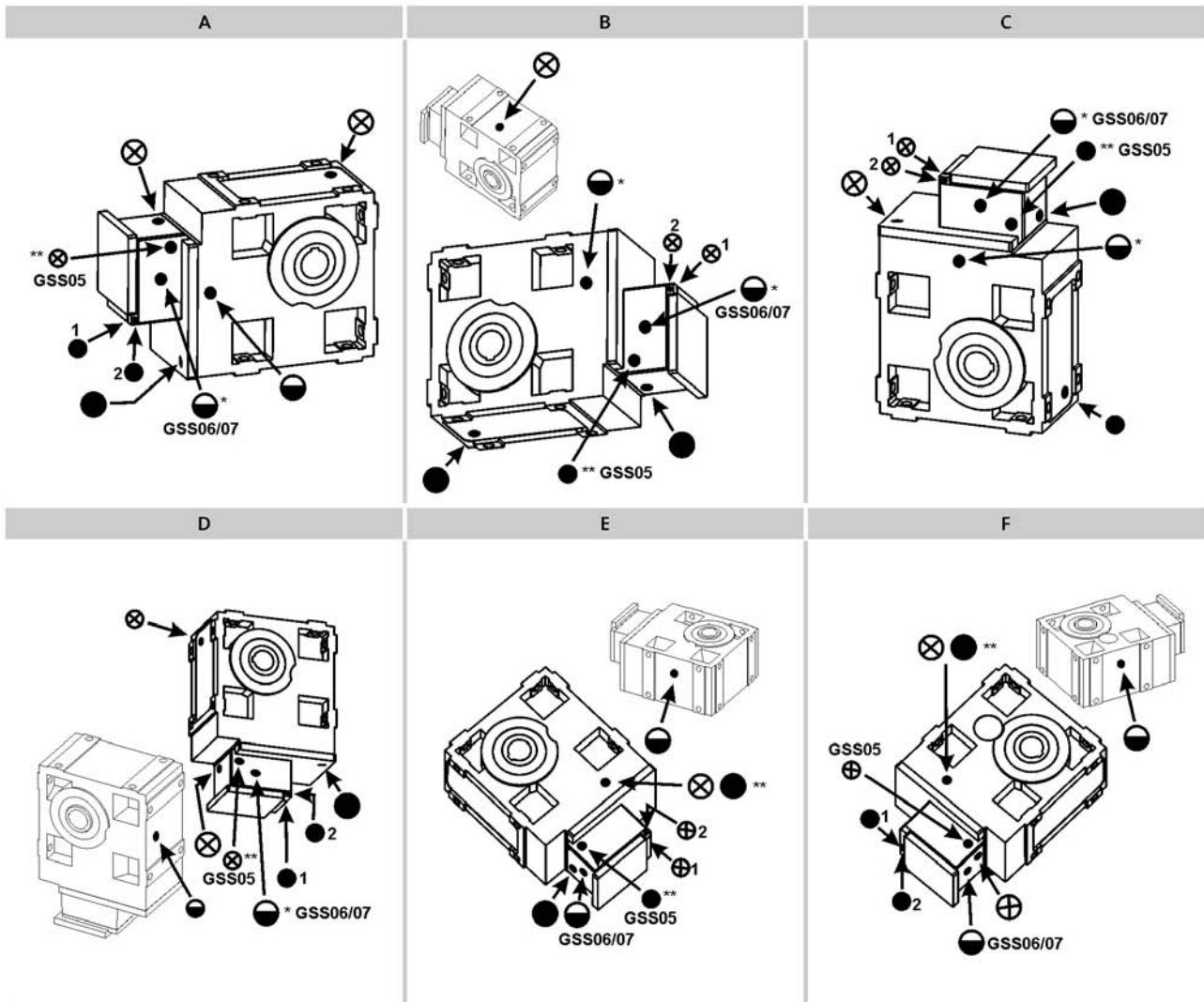
- A ... F Mounting position  
 ⊗ Ventilation / Oil filler plug  
 ● Oil drain plug  
 ◐ Oil control plug  
 \* On both sides  
 \*\* On opposite side

- Pos.1 standard  
 Pos.2 only with:  
 ▶ GSS05-2M □□□ 090C□□  
 ▶ GSS05-2M □□□ 100C□□  
 ▶ GSS06-2M □□□ 112C□□



**GSS**  
GSS [ ⊗ ] - ventilation

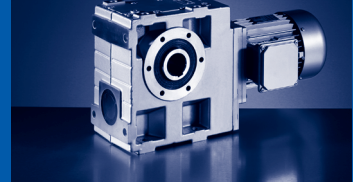
GSS05...07-3

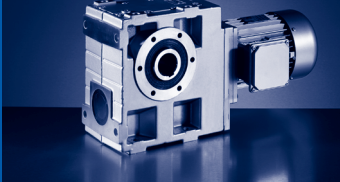


- A ... F Mounting position  
 ⊗ Ventilation / Oil filler plug  
 ● Oil drain plug  
 ◐ Oil control plug  
 \* On both sides  
 \*\* On opposite side

- Item 1 standard  
 Item 2 only on:  
 ▶ GSS07-3M □□□ 090C□□  
 ▶ GSS07-3M □□□ 100C□□

7





## GSS

GSS [kg] - MF□MA

### GSS□□-2M HAR / HBR

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 |
|-------|--------|------------------|------------------|------------------|
| GSS04 | m [kg] | 16               | 18               | 23               |
| GSS05 | m [kg] | 26               | 28               | 32               |
| GSS06 | m [kg] | 38               | 40               | 45               |
| GSS07 | m [kg] |                  |                  | 70               |

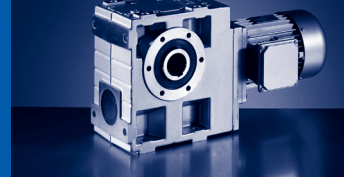
|       |        | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 |
|-------|--------|--------|------------------|--------|------------------|
| GSS04 | m [kg] | 31     |                  |        |                  |
| GSS05 | m [kg] | 40     | 49               |        |                  |
| GSS06 | m [kg] | 53     | 61               | 74     |                  |
| GSS07 | m [kg] | 78     | 86               | 99     | 129              |

### GSS□□-2M HAK

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 |
|-------|--------|------------------|------------------|------------------|
| GSS04 | m [kg] | 19               | 21               | 26               |
| GSS05 | m [kg] | 30               | 32               | 36               |
| GSS06 | m [kg] | 45               | 47               | 52               |
| GSS07 | m [kg] |                  |                  | 81               |

|       |        | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 |
|-------|--------|--------|------------------|--------|------------------|
| GSS04 | m [kg] | 33     |                  |        |                  |
| GSS05 | m [kg] | 44     | 53               |        |                  |
| GSS06 | m [kg] | 60     | 68               | 81     |                  |
| GSS07 | m [kg] | 89     | 97               | 110    | 140              |

- ▶ Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



### GSS□□-2M VAR / VBR

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 |
|-------|--------|------------------|------------------|------------------|
| GSS04 | m [kg] | 17               | 19               | 24               |
| GSS05 | m [kg] | 27               | 29               | 33               |
| GSS06 | m [kg] | 40               | 42               | 47               |
| GSS07 | m [kg] |                  |                  | 75               |

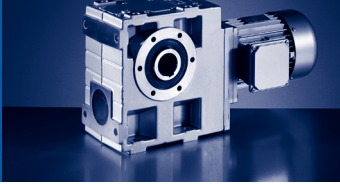
|       |        | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 |
|-------|--------|--------|------------------|--------|------------------|
| GSS04 | m [kg] | 31     |                  |        |                  |
| GSS05 | m [kg] | 41     | 50               |        |                  |
| GSS06 | m [kg] | 55     | 64               | 77     |                  |
| GSS07 | m [kg] | 83     | 91               | 104    | 134              |

### GSS□□-2M VAK

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 |
|-------|--------|------------------|------------------|------------------|
| GSS04 | m [kg] | 19               | 21               | 26               |
| GSS05 | m [kg] | 31               | 33               | 37               |
| GSS06 | m [kg] | 47               | 49               | 54               |
| GSS07 | m [kg] |                  |                  | 86               |

|       |        | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 |
|-------|--------|--------|------------------|--------|------------------|
| GSS04 | m [kg] | 34     |                  |        |                  |
| GSS05 | m [kg] | 45     | 54               |        |                  |
| GSS06 | m [kg] | 62     | 71               | 84     |                  |
| GSS07 | m [kg] | 94     | 102              | 115    | 145              |

- ▶ Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



### GSS□□-2M SAR / SBR

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 |
|-------|--------|------------------|------------------|------------------|
| GSS04 | m [kg] | 17               | 19               | 24               |
| GSS05 | m [kg] | 26               | 29               | 33               |
| GSS06 | m [kg] | 39               | 41               | 46               |
| GSS07 | m [kg] |                  |                  | 71               |

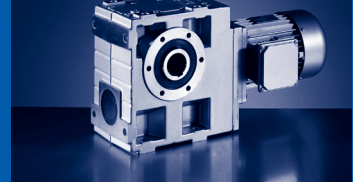
|       |        | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 |
|-------|--------|--------|------------------|--------|------------------|
| GSS04 | m [kg] | 31     |                  |        |                  |
| GSS05 | m [kg] | 41     | 50               |        |                  |
| GSS06 | m [kg] | 54     | 62               | 75     |                  |
| GSS07 | m [kg] | 79     | 88               | 101    | 130              |

### GSS□□-2M SAK

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 |
|-------|--------|------------------|------------------|------------------|
| GSS04 | m [kg] | 19               | 21               | 26               |
| GSS05 | m [kg] | 30               | 33               | 37               |
| GSS06 | m [kg] | 46               | 48               | 53               |
| GSS07 | m [kg] |                  |                  | 82               |

|       |        | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 |
|-------|--------|--------|------------------|--------|------------------|
| GSS04 | m [kg] | 34     |                  |        |                  |
| GSS05 | m [kg] | 45     | 54               |        |                  |
| GSS06 | m [kg] | 61     | 69               | 82     |                  |
| GSS07 | m [kg] | 90     | 99               | 112    | 141              |

- ▶ Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



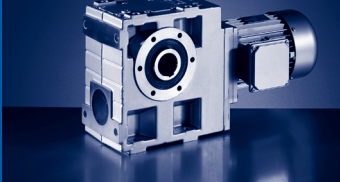
### GSS□□-3M HAR / HBR

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 | 090C32 |
|-------|---|------|------------------|------------------|--------|--------|--------|
| GSS05 | m | [kg] | 26               |                  |        |        |        |
| GSS06 | m | [kg] | 42               | 44               | 49     |        |        |
| GSS07 | m | [kg] | 71               | 73               |        | 78     | 85     |

### GSS□□-3M HAK

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 | 090C32 |
|-------|---|------|------------------|------------------|--------|--------|--------|
| GSS05 | m | [kg] | 30               |                  |        |        |        |
| GSS06 | m | [kg] | 49               | 51               | 56     |        |        |
| GSS07 | m | [kg] | 82               | 84               |        | 89     | 96     |

- Weights with oil filling for mounting position A; all values are approximate.  
The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



## GSS

GSS [kg] - MF□MA

### GSS□□-3M VAR / VBR

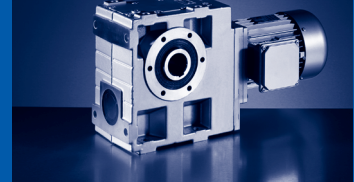
|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 | 090C32 |
|-------|--------|------------------|------------------|--------|--------|--------|
| GSS05 | m [kg] | 27               |                  |        |        |        |
| GSS06 | m [kg] | 44               | 46               | 51     |        |        |
| GSS07 | m [kg] | 76               | 78               |        | 83     | 90     |

### GSS□□-3M VAK

|       |        | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 | 090C32 |
|-------|--------|------------------|------------------|--------|--------|--------|
| GSS05 | m [kg] | 31               |                  |        |        |        |
| GSS06 | m [kg] | 51               | 53               | 58     |        |        |
| GSS07 | m [kg] | 87               | 89               |        | 94     | 101    |

- ▶ Weights with oil filling for mounting position A; all values are approximate. The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).





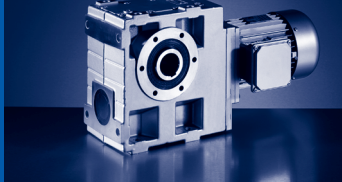
### GSS□□-3M SAR / SBR

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 | 090C32 |
|-------|---|------|------------------|------------------|--------|--------|--------|
| GSS05 | m | [kg] | 27               |                  |        |        |        |
| GSS06 | m | [kg] | 43               | 45               | 50     |        |        |
| GSS07 | m | [kg] | 72               | 74               |        | 79     | 87     |

### GSS□□-3M SAK

|       |   |      | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 | 090C32 |
|-------|---|------|------------------|------------------|--------|--------|--------|
| GSS05 | m | [kg] | 31               |                  |        |        |        |
| GSS06 | m | [kg] | 50               | 52               | 57     |        |        |
| GSS07 | m | [kg] | 83               | 85               |        | 90     | 98     |

- ▶ Weights with oil filling for mounting position A; all values are approximate.  
The weights relate to the basic version. Bear in mind that additional weights may be needed (e.g. for motor options).



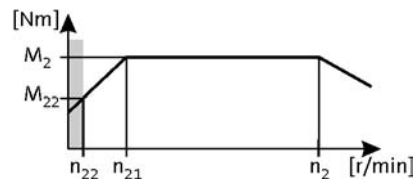
# GSS

GSS [Nm] - MF□MA

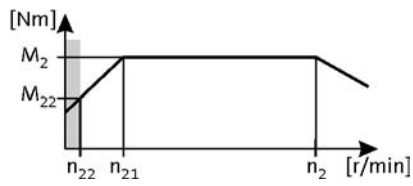
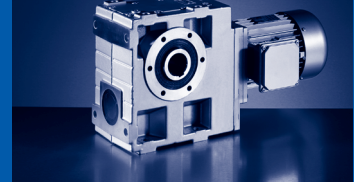
120 Hz:  $P_N = 0.55 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.3 \dots 3440 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 15       | 61       | - | 348     | 9.1      | 13    | 6.0 | 9.897   | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 13       | 55       | - | 318     | 10       | 14    | 5.2 | 10.827  | GSS05-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 10       | 43       | - | 249     | 12       | 18    | 5.5 | 13.810  | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 9.0      | 38       | - | 217     | 14       | 20    | 6.0 | 15.869  | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 8.3      | 35       | - | 198     | 16       | 22    | 5.2 | 17.360  | GSS05-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 6.5      | 27       | - | 155     | 19       | 29    | 5.1 | 22.143  | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 5.3      | 22       | - | 127     | 23       | 35    | 4.5 | 27.125  | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 4.5      | 19       | - | 108     | 24       | 39    | 3.4 | 31.738  | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 4.2      | 18       | - | 101     | 28       | 44    | 3.8 | 34.100  | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 3.7      | 15       | - | 88      | 29       | 47    | 2.9 | 39.200  | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 3.3      | 14       | - | 78      | 36       | 57    | 3.1 | 43.917  | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 2.9      | 12       | - | 69      | 36       | 60    | 2.5 | 50.000  | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 2.6      | 11       | - | 63      | 40       | 66    | 2.4 | 54.250  | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 2.3      | 9.8      | - | 56      | 44       | 73    | 2.2 | 61.250  | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 2.1      | 8.8      | - | 50      | 49       | 83    | 2.1 | 68.200  | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 1.9      | 7.8      | - | 45      | 53       | 91    | 1.9 | 77.000  | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 1.8      | 7.5      | - | 43      | 56       | 96    | 3.1 | 79.722  | GSS05-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 1.6      | 6.8      | - | 39      | 62       | 106   | 1.7 | 87.833  | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 1.6      | 6.8      | - | 39      | 62       | 108   | 2.9 | 87.833  | GSS05-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 1.5      | 6.1      | - | 35      | 68       | 117   | 1.5 | 99.167  | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 1.5      | 6.1      | - | 35      | 68       | 120   | 2.7 | 99.167  | GSS05-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 1.3      | 5.4      | - | 31      | 80       | 134   | 1.3 | 111.318 | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 1.3      | 5.3      | - | 30      | 81       | 141   | 2.5 | 113.667 | GSS05-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 1.1      | 4.8      | - | 27      | 86       | 147   | 1.2 | 125.682 | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 1.1      | 4.8      | - | 27      | 86       | 165   | 1.6 | 125.476 | GSS05-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 1.1      | 4.7      | - | 27      | 89       | 156   | 2.3 | 128.333 | GSS05-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 1.0      | 4.3      | - | 25      | 100      | 167   | 1.1 | 139.500 | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 1.0      | 4.4      | - | 25      | 99       | 172   | 2.1 | 137.950 | GSS05-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 0.9      | 3.8      | - | 22      | 109      | 183   | 1.0 | 157.500 | GSS04-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 0.9      | 3.9      | - | 22      | 106      | 202   | 1.4 | 153.708 | GSS05-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.9      | 3.9      | - | 22      | 109      | 191   | 1.9 | 155.750 | GSS05-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 0.8      | 3.4      | - | 20      | 128      | 220   | 1.6 | 176.313 | GSS05-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 0.8      | 3.4      | - | 20      | 124      | 210   | 2.9 | 174.375 | GSS06-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 0.7      | 3.1      | - | 18      | 134      | 251   | 1.2 | 193.233 | GSS05-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.7      | 3.1      | - | 18      | 141      | 234   | 2.9 | 196.875 | GSS06-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 0.7      | 3.1      | - | 18      | 135      | 222   | 3.2 | 194.857 | GSS06-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.7      | 3.0      | - | 17      | 140      | 245   | 1.5 | 199.063 | GSS05-2M□□□063C32 | E84AV□□□5514□□□ | 356 |
| 0.7      | 2.7      | - | 16      | 154      | 268   | 1.3 | 222.133 | GSS05-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.7      | 2.7      | - | 16      | 154      | 248   | 2.8 | 220.000 | GSS06-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.6      | 2.4      | - | 14      | 175      | 306   | 1.2 | 250.952 | GSS05-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.6      | 2.5      | - | 14      | 167      | 271   | 2.6 | 238.700 | GSS06-3M□□□063C32 | E84AV□□□5514□□□ | 364 |

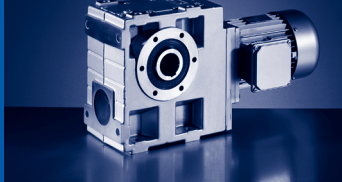


120 Hz:  $P_N = 0.55 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.3 \dots 3440 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$      |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|----------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |          |                   |                 |     |
| 0.5      | 2.2      | - | 13      | 190      | 302   | 2.3 | 269.500  | GSS06-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.5      | 2.1      | - | 12      | 198      | 338   | 1.1 | 283.333  | GSS05-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.5      | 2.0      | - | 11      | 215      | 371   | 1.0 | 307.417  | GSS05-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.5      | 1.9      | - | 11      | 220      | 350   | 2.0 | 310.689  | GSS06-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.4      | 1.7      | - | 9.8     | 250      | 388   | 1.8 | 350.778  | GSS06-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.4      | 1.7      | - | 9.5     | 263      | 412   | 3.0 | 363.179  | GSS07-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.4      | 1.6      | - | 8.9     | 276      | 431   | 1.7 | 386.467  | GSS06-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.4      | 1.5      | - | 8.7     | 287      | 453   | 2.7 | 394.245  | GSS07-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.3      | 1.4      | - | 7.9     | 313      | 480   | 1.5 | 436.333  | GSS06-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.3      | 1.4      | - | 7.7     | 326      | 503   | 2.4 | 445.116  | GSS07-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.3      | 1.2      | - | 7.0     | 361      | 556   | 2.2 | 490.403  | GSS07-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.3      | 1.2      | - | 6.9     | 359      | 550   | 1.3 | 497.722  | GSS06-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.3      | 1.1      | - | 6.2     | 409      | 620   | 2.0 | 553.681  | GSS07-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.3      | 1.1      | - | 6.1     | 406      | 612   | 1.2 | 561.944  | GSS06-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.2      | 1.0      | - | 5.5     | 457      | 689   | 1.0 | 630.803  | GSS06-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.2      | 1.0      | - | 5.4     | 472      | 715   | 1.7 | 634.639  | GSS07-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.2      | 0.8      | - | 4.8     | 518      | 763   | 0.9 | 712.197  | GSS06-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.2      | 0.8      | - | 4.8     | 535      | 795   | 1.6 | 716.528  | GSS07-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.2      | 0.7      | - | 4.1     | 625      | 928   | 1.3 | 833.556  | GSS07-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.2      | 0.6      | - | 3.7     | 708      | 1030  | 1.2 | 941.111  | GSS07-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.1      | 0.6      | - | 3.4     | 762      | 1112  | 1.1 | 1011.633 | GSS07-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.1      | 0.5      | - | 3.0     | 863      | 1232  | 1.0 | 1142.167 | GSS07-3M□□□063C32 | E84AV□□□5514□□□ | 364 |
| 0.1      | 0.5      | - | 2.8     | 929      | 1329  | 0.9 | 1227.755 | GSS07-3M□□□063C32 | E84AV□□□5514□□□ | 364 |



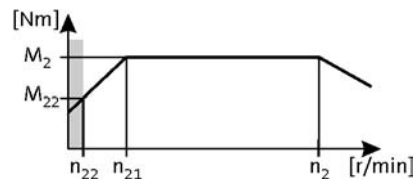
# GSS

GSS [Nm] - MF□MA

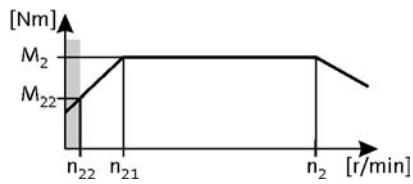
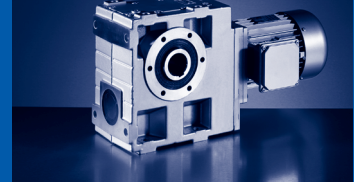
120 Hz:  $P_N = 0.75 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 141.7 \dots 3400 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 14       | 61       | - | 344     | 13       | 18    | 4.3 | 9.897   | GSS04-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 13       | 55       | - | 314     | 14       | 20    | 3.8 | 10.827  | GSS05-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 10       | 43       | - | 246     | 17       | 26    | 4.0 | 13.810  | GSS04-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 8.9      | 38       | - | 214     | 19       | 29    | 4.3 | 15.869  | GSS04-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 8.2      | 35       | - | 196     | 22       | 31    | 3.8 | 17.360  | GSS05-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 6.4      | 27       | - | 154     | 26       | 40    | 3.7 | 22.143  | GSS04-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 5.2      | 22       | - | 125     | 32       | 49    | 3.2 | 27.125  | GSS04-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 4.5      | 19       | - | 107     | 34       | 54    | 2.5 | 31.738  | GSS04-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 4.2      | 18       | - | 100     | 39       | 62    | 2.8 | 34.100  | GSS04-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 3.6      | 15       | - | 87      | 41       | 65    | 2.1 | 39.200  | GSS04-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 3.2      | 14       | - | 77      | 50       | 80    | 2.2 | 43.917  | GSS04-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 3.2      | 14       | - | 77      | 51       | 80    | 3.0 | 43.917  | GSS05-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 2.8      | 12       | - | 68      | 50       | 83    | 1.8 | 50.000  | GSS04-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 2.8      | 12       | - | 68      | 51       | 83    | 3.0 | 50.000  | GSS05-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 2.6      | 11       | - | 63      | 55       | 92    | 1.8 | 54.250  | GSS04-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 2.3      | 9.8      | - | 56      | 60       | 101   | 1.6 | 61.250  | GSS04-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 2.1      | 8.8      | - | 50      | 68       | 115   | 1.5 | 68.200  | GSS04-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 2.0      | 8.5      | - | 48      | 71       | 121   | 2.4 | 70.611  | GSS05-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 1.8      | 7.8      | - | 44      | 73       | 127   | 1.4 | 77.000  | GSS04-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 1.8      | 7.5      | - | 43      | 78       | 134   | 2.2 | 79.722  | GSS05-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 1.6      | 6.8      | - | 39      | 86       | 147   | 1.2 | 87.833  | GSS04-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 1.6      | 6.8      | - | 39      | 86       | 151   | 2.1 | 87.833  | GSS05-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 1.4      | 6.1      | - | 34      | 93       | 163   | 1.1 | 99.167  | GSS04-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 1.4      | 6.1      | - | 34      | 94       | 167   | 1.9 | 99.167  | GSS05-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 1.3      | 5.4      | - | 31      | 109      | 186   | 1.0 | 111.318 | GSS04-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 1.3      | 5.3      | - | 30      | 112      | 196   | 1.8 | 113.667 | GSS05-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 1.3      | 5.3      | - | 30      | 112      | 192   | 3.0 | 113.667 | GSS06-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 1.1      | 4.8      | - | 27      | 119      | 229   | 1.2 | 125.476 | GSS05-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 1.1      | 4.7      | - | 27      | 123      | 217   | 1.6 | 128.333 | GSS05-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 1.1      | 4.7      | - | 27      | 126      | 214   | 3.0 | 128.333 | GSS06-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 1.0      | 4.4      | - | 25      | 137      | 238   | 1.5 | 137.950 | GSS05-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 1.0      | 4.4      | - | 25      | 136      | 232   | 2.6 | 137.950 | GSS06-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 1.0      | 4.2      | - | 24      | 137      | 226   | 3.0 | 142.857 | GSS06-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.9      | 3.9      | - | 22      | 146      | 279   | 1.0 | 153.708 | GSS05-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.9      | 3.9      | - | 22      | 150      | 265   | 1.4 | 155.750 | GSS05-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 0.9      | 3.9      | - | 22      | 153      | 259   | 2.6 | 155.750 | GSS06-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 0.9      | 3.9      | - | 22      | 149      | 247   | 2.8 | 155.000 | GSS06-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.8      | 3.4      | - | 20      | 172      | 292   | 2.1 | 174.375 | GSS06-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 0.8      | 3.4      | - | 19      | 176      | 305   | 1.1 | 176.313 | GSS05-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 0.8      | 3.4      | - | 19      | 169      | 276   | 2.6 | 175.000 | GSS06-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.7      | 3.0      | - | 17      | 193      | 339   | 1.1 | 199.063 | GSS05-2M□□□063C42 | E84AV□□□7514□□□ | 356 |

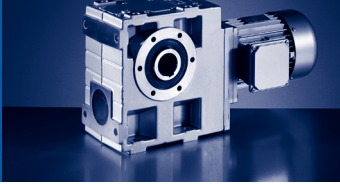


120 Hz:  $P_N = 0.75 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 141.7 \dots 3400 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 0.7      | 3.1      | - | 17      | 195      | 326   | 2.1 | 196.875 | GSS06-2M□□□063C42 | E84AV□□□7514□□□ | 356 |
| 0.7      | 3.1      | - | 17      | 188      | 310   | 2.3 | 194.857 | GSS06-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.6      | 2.7      | - | 16      | 213      | 345   | 2.1 | 220.000 | GSS06-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.6      | 2.7      | - | 15      | 212      | 372   | 1.0 | 222.133 | GSS05-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.6      | 2.5      | - | 14      | 232      | 377   | 1.9 | 238.700 | GSS06-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.6      | 2.4      | - | 14      | 244      | 397   | 3.1 | 247.139 | GSS07-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.5      | 2.2      | - | 13      | 262      | 420   | 1.7 | 269.500 | GSS06-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.5      | 2.2      | - | 12      | 277      | 444   | 2.8 | 279.028 | GSS07-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.5      | 1.9      | - | 11      | 304      | 486   | 1.5 | 310.689 | GSS06-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.4      | 1.9      | - | 11      | 321      | 516   | 2.4 | 321.673 | GSS07-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.4      | 1.7      | - | 9.7     | 345      | 539   | 1.3 | 350.778 | GSS06-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.4      | 1.7      | - | 9.4     | 365      | 574   | 2.1 | 363.179 | GSS07-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.4      | 1.6      | - | 8.8     | 381      | 598   | 1.2 | 386.467 | GSS06-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.4      | 1.5      | - | 8.6     | 397      | 631   | 2.0 | 394.245 | GSS07-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.3      | 1.4      | - | 7.8     | 431      | 666   | 1.1 | 436.333 | GSS06-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.3      | 1.4      | - | 7.6     | 451      | 700   | 1.8 | 445.116 | GSS07-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.3      | 1.2      | - | 6.9     | 498      | 773   | 1.6 | 490.403 | GSS07-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.3      | 1.2      | - | 6.8     | 493      | 762   | 0.9 | 497.722 | GSS06-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.3      | 1.1      | - | 6.1     | 565      | 862   | 1.4 | 553.681 | GSS07-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.2      | 1.0      | - | 5.4     | 650      | 993   | 1.3 | 634.639 | GSS07-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.2      | 0.8      | - | 4.8     | 736      | 1104  | 1.1 | 716.528 | GSS07-3M□□□063C42 | E84AV□□□7514□□□ | 364 |
| 0.2      | 0.7      | - | 4.1     | 859      | 1287  | 1.0 | 833.556 | GSS07-3M□□□063C42 | E84AV□□□7514□□□ | 364 |



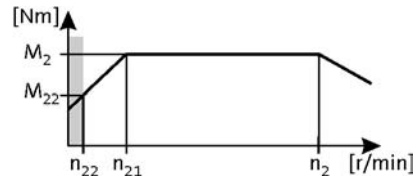
# GSS

GSS [Nm] - MF□MA

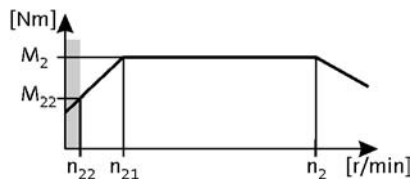
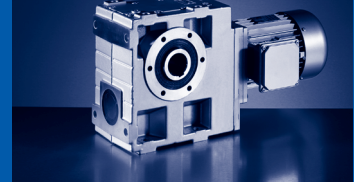
120 Hz:  $P_N = 1.10 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.4 \dots 3490 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 15       | 61       | - | 353     | 18       | 26    | 4.3 | 9.897   | GSS04-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 13       | 55       | - | 322     | 20       | 28    | 4.3 | 10.827  | GSS04-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 11       | 43       | - | 253     | 25       | 36    | 4.0 | 13.810  | GSS04-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 9.2      | 38       | - | 220     | 28       | 41    | 3.2 | 15.869  | GSS04-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 8.4      | 35       | - | 201     | 31       | 45    | 3.1 | 17.360  | GSS04-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 6.6      | 27       | - | 158     | 39       | 58    | 2.6 | 22.143  | GSS04-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 5.4      | 22       | - | 129     | 47       | 71    | 2.3 | 27.125  | GSS04-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 4.6      | 19       | - | 110     | 51       | 78    | 1.7 | 31.738  | GSS04-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 4.6      | 19       | - | 110     | 51       | 76    | 2.8 | 31.738  | GSS05-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 4.3      | 18       | - | 102     | 59       | 89    | 1.9 | 34.100  | GSS04-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 4.1      | 17       | - | 99      | 60       | 92    | 3.1 | 35.306  | GSS05-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 3.7      | 15       | - | 89      | 61       | 94    | 1.5 | 39.200  | GSS04-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 3.7      | 15       | - | 89      | 62       | 93    | 2.4 | 39.200  | GSS05-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 3.3      | 14       | - | 80      | 75       | 115   | 1.6 | 43.917  | GSS04-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 3.3      | 14       | - | 80      | 74       | 115   | 2.7 | 43.917  | GSS05-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 2.9      | 12       | - | 70      | 75       | 120   | 1.3 | 50.000  | GSS04-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 2.9      | 12       | - | 70      | 77       | 120   | 2.1 | 50.000  | GSS05-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 2.7      | 11       | - | 64      | 82       | 132   | 1.2 | 54.250  | GSS04-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 2.7      | 11       | - | 64      | 84       | 133   | 2.0 | 54.250  | GSS05-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 2.4      | 9.8      | - | 57      | 90       | 146   | 1.1 | 61.250  | GSS04-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 2.4      | 9.8      | - | 57      | 92       | 147   | 1.8 | 61.250  | GSS05-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 2.1      | 8.8      | - | 51      | 101      | 165   | 1.1 | 68.200  | GSS04-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 2.1      | 8.5      | - | 49      | 106      | 174   | 1.7 | 70.611  | GSS05-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 1.9      | 7.8      | - | 45      | 109      | 182   | 1.0 | 77.000  | GSS04-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 1.8      | 7.5      | - | 44      | 116      | 193   | 1.6 | 79.722  | GSS05-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 1.8      | 7.5      | - | 44      | 119      | 192   | 3.0 | 79.722  | GSS06-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 1.7      | 6.8      | - | 40      | 129      | 217   | 1.5 | 87.833  | GSS05-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 1.7      | 6.8      | - | 40      | 129      | 213   | 2.9 | 87.833  | GSS06-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 1.5      | 6.1      | - | 35      | 141      | 241   | 1.4 | 99.167  | GSS05-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 1.5      | 6.1      | - | 35      | 145      | 239   | 2.6 | 99.167  | GSS06-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 1.3      | 5.3      | - | 31      | 166      | 281   | 1.2 | 113.667 | GSS05-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 1.3      | 5.3      | - | 31      | 166      | 276   | 2.5 | 113.667 | GSS06-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 1.2      | 4.7      | - | 28      | 182      | 293   | 2.3 | 126.531 | GSS06-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 1.1      | 4.7      | - | 27      | 182      | 312   | 1.2 | 128.333 | GSS05-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 1.1      | 4.7      | - | 27      | 187      | 309   | 2.2 | 128.333 | GSS06-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 1.1      | 4.4      | - | 25      | 203      | 342   | 1.1 | 137.950 | GSS05-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 1.1      | 4.4      | - | 25      | 201      | 334   | 2.1 | 137.950 | GSS06-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 1.0      | 4.2      | - | 24      | 205      | 327   | 2.1 | 142.857 | GSS06-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.9      | 3.9      | - | 23      | 223      | 357   | 2.0 | 155.000 | GSS06-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.9      | 3.9      | - | 22      | 222      | 380   | 0.9 | 155.750 | GSS05-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 0.9      | 3.9      | - | 22      | 228      | 374   | 1.9 | 155.750 | GSS06-2M□□□071C32 | E84AV□□□1124□□□ | 356 |

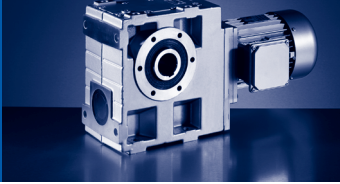


120 Hz:  $P_N = 1.10 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.4 \dots 3490 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 0.8      | 3.4      | - | 20      | 255      | 420   | 1.7 | 174.375 | GSS06-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 0.8      | 3.4      | - | 20      | 252      | 399   | 1.8 | 175.000 | GSS06-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.8      | 3.4      | - | 20      | 258      | 406   | 3.0 | 175.000 | GSS07-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.7      | 3.1      | - | 18      | 289      | 469   | 1.5 | 196.875 | GSS06-2M□□□071C32 | E84AV□□□1124□□□ | 356 |
| 0.8      | 3.1      | - | 18      | 281      | 446   | 1.6 | 194.857 | GSS06-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.7      | 3.0      | - | 17      | 298      | 470   | 2.6 | 201.746 | GSS07-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.7      | 2.7      | - | 16      | 318      | 497   | 1.4 | 220.000 | GSS06-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.6      | 2.5      | - | 15      | 345      | 543   | 1.3 | 238.700 | GSS06-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.6      | 2.6      | - | 15      | 337      | 526   | 2.3 | 227.778 | GSS07-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.6      | 2.4      | - | 14      | 366      | 574   | 2.1 | 247.139 | GSS07-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.5      | 2.2      | - | 13      | 390      | 605   | 1.2 | 269.500 | GSS06-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.5      | 2.2      | - | 13      | 414      | 641   | 1.9 | 279.028 | GSS07-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.5      | 1.9      | - | 11      | 451      | 699   | 1.0 | 310.689 | GSS06-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.5      | 1.9      | - | 11      | 479      | 744   | 1.7 | 321.673 | GSS07-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.4      | 1.7      | - | 10      | 510      | 775   | 0.9 | 350.778 | GSS06-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.4      | 1.7      | - | 9.6     | 543      | 827   | 1.5 | 363.179 | GSS07-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.4      | 1.5      | - | 8.9     | 591      | 908   | 1.4 | 394.245 | GSS07-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.3      | 1.4      | - | 7.8     | 669      | 1006  | 1.2 | 445.116 | GSS07-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.3      | 1.2      | - | 7.1     | 739      | 1112  | 1.1 | 490.403 | GSS07-3M□□□071C32 | E84AV□□□1124□□□ | 364 |
| 0.3      | 1.1      | - | 6.3     | 837      | 1238  | 1.0 | 553.681 | GSS07-3M□□□071C32 | E84AV□□□1124□□□ | 364 |

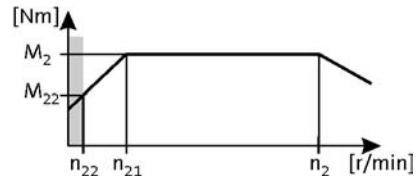


**GSS**  
GSS [Nm] - MF□MA

120 Hz:  $P_N = 1.50 \text{ kW}$

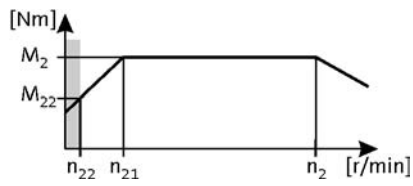
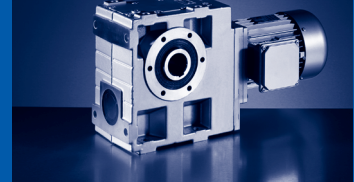
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.8 \dots 3450 \text{ r/min}$



| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i   |         |                   |                 |     |
|---------------------|---------------------|------------------|------------------|---------------|-----|-----|---------|-------------------|-----------------|-----|
| 15                  | 61                  | -                | 349              | 26            | 36  | 3.1 | 9.897   | GSS04-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 13                  | 55                  | -                | 319              | 28            | 40  | 3.1 | 10.827  | GSS04-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 10                  | 43                  | -                | 250              | 35            | 51  | 2.9 | 13.810  | GSS04-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 9.1                 | 38                  | -                | 217              | 39            | 58  | 2.3 | 15.869  | GSS04-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 8.3                 | 35                  | -                | 199              | 43            | 63  | 2.2 | 17.360  | GSS04-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 6.5                 | 27                  | -                | 156              | 54            | 80  | 1.9 | 22.143  | GSS04-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 6.5                 | 27                  | -                | 156              | 54            | 80  | 3.1 | 22.143  | GSS05-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 5.3                 | 22                  | -                | 127              | 65            | 99  | 1.6 | 27.125  | GSS04-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 5.3                 | 22                  | -                | 127              | 65            | 98  | 2.7 | 27.125  | GSS05-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 4.5                 | 19                  | -                | 109              | 70            | 108 | 1.3 | 31.738  | GSS04-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 4.5                 | 19                  | -                | 109              | 71            | 106 | 2.0 | 31.738  | GSS05-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 4.2                 | 18                  | -                | 101              | 81            | 124 | 1.4 | 34.100  | GSS04-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 4.1                 | 17                  | -                | 98               | 84            | 128 | 2.2 | 35.306  | GSS05-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 3.7                 | 15                  | -                | 88               | 84            | 130 | 1.1 | 39.200  | GSS04-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 3.7                 | 15                  | -                | 88               | 85            | 129 | 1.8 | 39.200  | GSS05-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 3.3                 | 14                  | -                | 79               | 102           | 159 | 1.1 | 43.917  | GSS04-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 3.3                 | 14                  | -                | 79               | 103           | 160 | 1.9 | 43.917  | GSS05-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 3.3                 | 14                  | -                | 79               | 105           | 159 | 2.8 | 43.917  | GSS06-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 2.9                 | 12                  | -                | 69               | 103           | 166 | 0.9 | 50.000  | GSS04-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 2.9                 | 12                  | -                | 69               | 106           | 166 | 1.5 | 50.000  | GSS05-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 2.9                 | 12                  | -                | 69               | 108           | 168 | 2.9 | 50.000  | GSS06-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 2.7                 | 11                  | -                | 64               | 116           | 184 | 1.4 | 54.250  | GSS05-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 2.4                 | 9.8                 | -                | 56               | 127           | 205 | 1.3 | 61.250  | GSS05-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 2.0                 | 8.5                 | -                | 49               | 146           | 241 | 1.2 | 70.611  | GSS05-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 2.0                 | 8.5                 | -                | 49               | 147           | 239 | 2.4 | 70.611  | GSS06-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 1.8                 | 7.5                 | -                | 43               | 160           | 267 | 1.1 | 79.722  | GSS05-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 1.8                 | 7.5                 | -                | 43               | 165           | 268 | 2.2 | 79.722  | GSS06-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 1.6                 | 6.8                 | -                | 39               | 177           | 300 | 1.1 | 87.833  | GSS05-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 1.6                 | 6.8                 | -                | 39               | 179           | 297 | 2.1 | 87.833  | GSS06-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 1.5                 | 6.1                 | -                | 35               | 193           | 333 | 1.0 | 99.167  | GSS05-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 1.5                 | 6.1                 | -                | 35               | 201           | 333 | 1.9 | 99.167  | GSS06-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 1.3                 | 5.3                 | -                | 30               | 229           | 390 | 0.9 | 113.667 | GSS05-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 1.3                 | 5.3                 | -                | 30               | 230           | 384 | 1.8 | 113.667 | GSS06-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 1.1                 | 4.7                 | -                | 27               | 259           | 429 | 1.6 | 128.333 | GSS06-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 1.1                 | 4.7                 | -                | 27               | 251           | 407 | 1.7 | 126.531 | GSS06-3M□□□071C42 | E84AV□□□1524□□□ | 364 |
| 1.1                 | 4.7                 | -                | 27               | 260           | 412 | 3.0 | 126.531 | GSS07-3M□□□071C42 | E84AV□□□1524□□□ | 364 |
| 1.0                 | 4.4                 | -                | 25               | 278           | 464 | 1.5 | 137.950 | GSS06-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 1.0                 | 4.2                 | -                | 24               | 283           | 455 | 1.5 | 142.857 | GSS06-3M□□□071C42 | E84AV□□□1524□□□ | 364 |
| 1.0                 | 4.2                 | -                | 24               | 293           | 462 | 2.7 | 142.857 | GSS07-3M□□□071C42 | E84AV□□□1524□□□ | 364 |
| 0.9                 | 3.9                 | -                | 22               | 308           | 497 | 1.4 | 155.000 | GSS06-3M□□□071C42 | E84AV□□□1524□□□ | 364 |
| 0.9                 | 3.9                 | -                | 22               | 314           | 519 | 1.4 | 155.750 | GSS06-2M□□□071C42 | E84AV□□□1524□□□ | 356 |



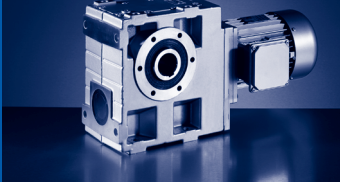


120 Hz:  $P_N = 1.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 143.8 \dots 3450 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 0.9      | 3.9      | - | 22      | 318      | 504   | 2.4 | 155.000 | GSS07-3M□□□071C42 | E84AV□□□1524□□□ | 364 |
| 0.8      | 3.4      | - | 20      | 351      | 583   | 1.2 | 174.375 | GSS06-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 0.8      | 3.4      | - | 20      | 347      | 553   | 1.3 | 175.000 | GSS06-3M□□□071C42 | E84AV□□□1524□□□ | 364 |
| 0.8      | 3.4      | - | 20      | 358      | 565   | 2.2 | 175.000 | GSS07-3M□□□071C42 | E84AV□□□1524□□□ | 364 |
| 0.7      | 3.1      | - | 18      | 397      | 650   | 1.1 | 196.875 | GSS06-2M□□□071C42 | E84AV□□□1524□□□ | 356 |
| 0.7      | 3.1      | - | 18      | 387      | 619   | 1.2 | 194.857 | GSS06-3M□□□071C42 | E84AV□□□1524□□□ | 364 |
| 0.7      | 3.0      | - | 17      | 413      | 654   | 1.9 | 201.746 | GSS07-3M□□□071C42 | E84AV□□□1524□□□ | 364 |
| 0.7      | 2.7      | - | 16      | 437      | 690   | 1.0 | 220.000 | GSS06-3M□□□071C42 | E84AV□□□1524□□□ | 364 |
| 0.6      | 2.5      | - | 15      | 474      | 752   | 1.0 | 238.700 | GSS06-3M□□□071C42 | E84AV□□□1524□□□ | 364 |
| 0.6      | 2.6      | - | 15      | 465      | 732   | 1.7 | 227.778 | GSS07-3M□□□071C42 | E84AV□□□1524□□□ | 364 |
| 0.6      | 2.4      | - | 14      | 504      | 798   | 1.6 | 247.139 | GSS07-3M□□□071C42 | E84AV□□□1524□□□ | 364 |
| 0.5      | 2.2      | - | 12      | 570      | 891   | 1.4 | 279.028 | GSS07-3M□□□071C42 | E84AV□□□1524□□□ | 364 |
| 0.5      | 1.9      | - | 11      | 660      | 1033  | 1.2 | 321.673 | GSS07-3M□□□071C42 | E84AV□□□1524□□□ | 364 |
| 0.4      | 1.7      | - | 9.5     | 747      | 1147  | 1.1 | 363.179 | GSS07-3M□□□071C42 | E84AV□□□1524□□□ | 364 |
| 0.4      | 1.5      | - | 8.8     | 813      | 1259  | 1.0 | 394.245 | GSS07-3M□□□071C42 | E84AV□□□1524□□□ | 364 |



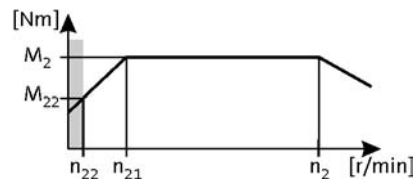
# GSS

GSS [Nm] - MF□MA

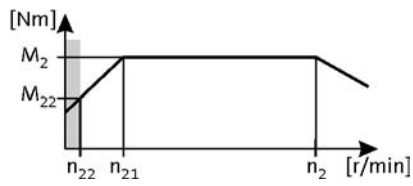
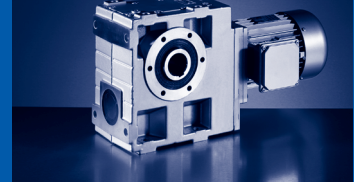
120 Hz:  $P_N = 2.20 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.8 \dots 3500 \text{ r/min}$



| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i   |         |                   |                 |     |
|---------------------|---------------------|------------------|------------------|---------------|-----|-----|---------|-------------------|-----------------|-----|
| 15                  | 61                  | -                | 354              | 37            | 53  | 2.2 | 9.897   | GSS04-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 14                  | 55                  | -                | 323              | 41            | 58  | 2.1 | 10.827  | GSS04-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 14                  | 55                  | -                | 323              | 40            | 58  | 3.2 | 10.827  | GSS05-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 11                  | 43                  | -                | 253              | 51            | 74  | 2.0 | 13.810  | GSS04-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 11                  | 43                  | -                | 253              | 51            | 74  | 3.0 | 13.810  | GSS05-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 9.2                 | 38                  | -                | 221              | 57            | 84  | 1.6 | 15.869  | GSS04-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 9.2                 | 38                  | -                | 221              | 56            | 83  | 2.6 | 15.869  | GSS05-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 8.4                 | 35                  | -                | 202              | 62            | 92  | 1.5 | 17.360  | GSS04-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 8.4                 | 35                  | -                | 202              | 62            | 91  | 2.5 | 17.360  | GSS05-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 6.6                 | 27                  | -                | 158              | 78            | 117 | 1.3 | 22.143  | GSS04-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 6.6                 | 27                  | -                | 158              | 78            | 116 | 2.1 | 22.143  | GSS05-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 5.4                 | 22                  | -                | 129              | 94            | 143 | 1.1 | 27.125  | GSS04-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 5.4                 | 22                  | -                | 129              | 95            | 143 | 1.8 | 27.125  | GSS05-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 4.6                 | 19                  | -                | 110              | 103           | 155 | 1.4 | 31.738  | GSS05-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 4.6                 | 19                  | -                | 110              | 102           | 158 | 2.3 | 31.738  | GSS06-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 4.1                 | 17                  | -                | 99               | 121           | 187 | 1.5 | 35.306  | GSS05-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 4.1                 | 17                  | -                | 99               | 120           | 185 | 3.1 | 35.306  | GSS06-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 3.7                 | 15                  | -                | 89               | 124           | 188 | 1.2 | 39.200  | GSS05-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 3.7                 | 15                  | -                | 89               | 126           | 193 | 2.1 | 39.200  | GSS06-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 3.3                 | 14                  | -                | 80               | 148           | 233 | 1.3 | 43.917  | GSS05-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 3.3                 | 14                  | -                | 80               | 148           | 231 | 2.7 | 43.917  | GSS06-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 2.9                 | 12                  | -                | 70               | 153           | 242 | 1.0 | 50.000  | GSS05-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 2.9                 | 12                  | -                | 70               | 157           | 246 | 2.0 | 50.000  | GSS06-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 2.9                 | 12                  | -                | 70               | 161           | 248 | 3.0 | 50.000  | GSS07-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 2.7                 | 11                  | -                | 65               | 167           | 268 | 1.0 | 54.250  | GSS05-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 2.7                 | 11                  | -                | 65               | 169           | 269 | 2.0 | 54.250  | GSS06-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 2.4                 | 9.8                 | -                | 57               | 184           | 297 | 0.9 | 61.250  | GSS05-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 2.4                 | 9.8                 | -                | 57               | 190           | 301 | 1.8 | 61.250  | GSS06-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 2.1                 | 8.5                 | -                | 50               | 214           | 349 | 1.7 | 70.611  | GSS06-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 2.1                 | 8.5                 | -                | 50               | 223           | 352 | 2.8 | 70.611  | GSS07-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 1.8                 | 7.5                 | -                | 44               | 240           | 391 | 1.5 | 79.722  | GSS06-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 1.8                 | 7.5                 | -                | 44               | 250           | 394 | 2.7 | 79.722  | GSS07-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 1.7                 | 6.8                 | -                | 40               | 260           | 433 | 1.5 | 87.833  | GSS06-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 1.7                 | 6.9                 | -                | 40               | 269           | 432 | 2.7 | 86.542  | GSS07-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 1.5                 | 6.1                 | -                | 36               | 302           | 484 | 2.4 | 97.708  | GSS07-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 1.5                 | 6.1                 | -                | 35               | 291           | 485 | 1.3 | 99.167  | GSS06-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 1.3                 | 5.3                 | -                | 31               | 332           | 559 | 1.2 | 113.667 | GSS06-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 1.3                 | 5.3                 | -                | 31               | 347           | 567 | 2.2 | 113.667 | GSS07-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 1.2                 | 4.7                 | -                | 28               | 363           | 593 | 1.2 | 126.531 | GSS06-3M□□□080C32 | E84AV□□□2224□□□ | 364 |
| 1.2                 | 4.7                 | -                | 28               | 379           | 602 | 2.1 | 126.531 | GSS07-3M□□□080C32 | E84AV□□□2224□□□ | 364 |
| 1.1                 | 4.7                 | -                | 27               | 374           | 625 | 1.1 | 128.333 | GSS06-2M□□□080C32 | E84AV□□□2224□□□ | 356 |

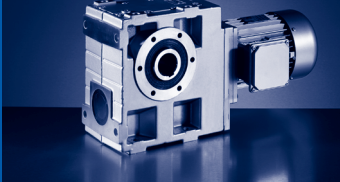


120 Hz:  $P_N = 2.20 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.8 \dots 3500 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 1.1      | 4.7      | - | 27      | 391      | 635   | 1.9 | 128.333 | GSS07-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 1.1      | 4.4      | - | 25      | 401      | 675   | 1.1 | 137.950 | GSS06-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 1.0      | 4.2      | - | 25      | 409      | 662   | 1.1 | 142.857 | GSS06-3M□□□080C32 | E84AV□□□2224□□□ | 364 |
| 1.1      | 4.4      | - | 25      | 417      | 687   | 1.8 | 137.950 | GSS07-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 1.0      | 4.2      | - | 25      | 426      | 674   | 1.8 | 142.857 | GSS07-3M□□□080C32 | E84AV□□□2224□□□ | 364 |
| 0.9      | 3.9      | - | 23      | 453      | 754   | 1.0 | 155.750 | GSS06-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 0.9      | 3.9      | - | 23      | 444      | 722   | 1.0 | 155.000 | GSS06-3M□□□080C32 | E84AV□□□2224□□□ | 364 |
| 0.9      | 3.9      | - | 23      | 471      | 770   | 1.6 | 155.750 | GSS07-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 0.9      | 3.9      | - | 23      | 461      | 735   | 1.7 | 155.000 | GSS07-3M□□□080C32 | E84AV□□□2224□□□ | 364 |
| 0.8      | 3.4      | - | 20      | 522      | 864   | 1.4 | 174.375 | GSS07-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 0.8      | 3.4      | - | 20      | 519      | 824   | 1.5 | 175.000 | GSS07-3M□□□080C32 | E84AV□□□2224□□□ | 364 |
| 0.7      | 3.1      | - | 18      | 592      | 968   | 1.3 | 196.875 | GSS07-2M□□□080C32 | E84AV□□□2224□□□ | 356 |
| 0.7      | 3.0      | - | 17      | 597      | 952   | 1.3 | 201.746 | GSS07-3M□□□080C32 | E84AV□□□2224□□□ | 364 |
| 0.6      | 2.6      | - | 15      | 672      | 1065  | 1.2 | 227.778 | GSS07-3M□□□080C32 | E84AV□□□2224□□□ | 364 |
| 0.6      | 2.4      | - | 14      | 728      | 1160  | 1.1 | 247.139 | GSS07-3M□□□080C32 | E84AV□□□2224□□□ | 364 |
| 0.5      | 2.2      | - | 13      | 822      | 1295  | 1.0 | 279.028 | GSS07-3M□□□080C32 | E84AV□□□2224□□□ | 364 |



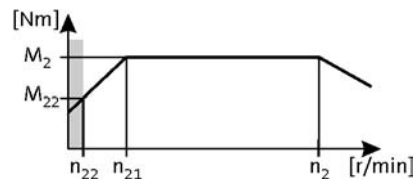
# GSS

GSS [Nm] - MF□MA

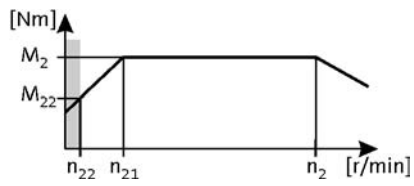
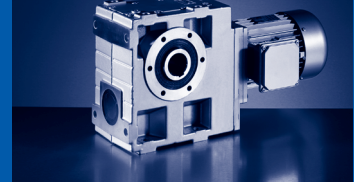
120 Hz:  $P_N = 3.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$




| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 15       | 91       | - | 352     | 52       | 73    | 1.6 | 9.897   | GSS04-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 15       | 91       | - | 352     | 51       | 73    | 2.4 | 9.897   | GSS05-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 13       | 83       | - | 321     | 56       | 80    | 1.6 | 10.827  | GSS04-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 13       | 83       | - | 321     | 56       | 80    | 2.4 | 10.827  | GSS05-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 11       | 65       | - | 252     | 71       | 102   | 1.5 | 13.810  | GSS04-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 11       | 65       | - | 252     | 71       | 102   | 2.2 | 13.810  | GSS05-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 9.1      | 57       | - | 219     | 79       | 116   | 1.2 | 15.869  | GSS04-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 9.1      | 57       | - | 219     | 79       | 114   | 1.9 | 15.869  | GSS05-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 9.1      | 57       | - | 219     | 79       | 115   | 2.8 | 15.869  | GSS06-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 8.4      | 52       | - | 201     | 86       | 127   | 1.1 | 17.360  | GSS04-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 8.4      | 52       | - | 201     | 86       | 125   | 1.8 | 17.360  | GSS05-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 8.4      | 52       | - | 201     | 86       | 126   | 2.8 | 17.360  | GSS06-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 6.6      | 41       | - | 157     | 108      | 161   | 1.0 | 22.143  | GSS04-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 6.6      | 41       | - | 157     | 108      | 161   | 1.5 | 22.143  | GSS05-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 6.6      | 41       | - | 157     | 108      | 161   | 2.6 | 22.143  | GSS06-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 5.4      | 33       | - | 128     | 131      | 197   | 1.3 | 27.125  | GSS05-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 5.4      | 33       | - | 128     | 131      | 197   | 2.4 | 27.125  | GSS06-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 4.6      | 28       | - | 110     | 143      | 213   | 1.0 | 31.738  | GSS05-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 4.6      | 28       | - | 110     | 144      | 218   | 1.7 | 31.738  | GSS06-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 4.1      | 26       | - | 99      | 168      | 258   | 1.1 | 35.306  | GSS05-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 4.1      | 26       | - | 99      | 168      | 256   | 2.3 | 35.306  | GSS06-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 3.7      | 23       | - | 89      | 176      | 267   | 1.6 | 39.200  | GSS06-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 3.4      | 21       | - | 80      | 212      | 314   | 2.8 | 43.271  | GSS07-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 3.3      | 21       | - | 79      | 205      | 321   | 1.0 | 43.917  | GSS05-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 3.3      | 21       | - | 79      | 207      | 319   | 1.9 | 43.917  | GSS06-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 2.9      | 18       | - | 70      | 219      | 340   | 1.5 | 50.000  | GSS06-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 2.9      | 18       | - | 70      | 226      | 343   | 2.2 | 50.000  | GSS07-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 2.7      | 17       | - | 64      | 235      | 371   | 1.4 | 54.250  | GSS06-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 2.4      | 15       | - | 57      | 263      | 415   | 1.3 | 61.250  | GSS06-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 2.1      | 13       | - | 49      | 297      | 481   | 1.2 | 70.611  | GSS06-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 2.1      | 13       | - | 49      | 311      | 488   | 2.1 | 70.611  | GSS07-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 1.8      | 11       | - | 44      | 333      | 539   | 1.1 | 79.722  | GSS06-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 1.8      | 11       | - | 44      | 349      | 545   | 2.0 | 79.722  | GSS07-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 1.7      | 10       | - | 40      | 360      | 597   | 1.1 | 87.833  | GSS06-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 1.7      | 10       | - | 40      | 374      | 597   | 1.9 | 86.542  | GSS07-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 1.5      | 9.2      | - | 36      | 419      | 668   | 1.8 | 97.708  | GSS07-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 1.5      | 9.1      | - | 35      | 403      | 668   | 1.0 | 99.167  | GSS06-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 1.3      | 7.9      | - | 31      | 459      | 770   | 0.9 | 113.667 | GSS06-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 1.3      | 7.9      | - | 31      | 481      | 783   | 1.6 | 113.667 | GSS07-2M□□□080C42 | E84AV□□□3024□□S | 356 |
| 1.2      | 7.1      | - | 28      | 526      | 831   | 1.5 | 126.531 | GSS07-3M□□□080C42 | E84AV□□□3024□□S | 364 |
| 1.1      | 7.0      | - | 27      | 542      | 876   | 1.4 | 128.333 | GSS07-2M□□□080C42 | E84AV□□□3024□□S | 356 |

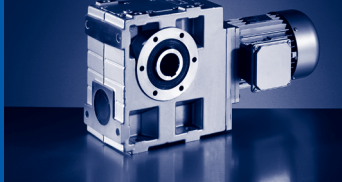


120 Hz:  $P_N = 3.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |   |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|---|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |  |
| 1.1      | 6.5      | - | 25      | 578      | 947   | 1.3 | 137.950 | GSS07-2M□□□080C42 | E84AV□□□3024□□S | 356   |
| 1.0      | 6.3      | - | 24      | 591      | 930   | 1.3 | 142.857 | GSS07-3M□□□080C42 | E84AV□□□3024□□S | 364   |
| 0.9      | 5.8      | - | 23      | 639      | 1014  | 1.2 | 155.000 | GSS07-3M□□□080C42 | E84AV□□□3024□□S | 364   |
| 0.9      | 5.8      | - | 22      | 652      | 1061  | 1.2 | 155.750 | GSS07-2M□□□080C42 | E84AV□□□3024□□S | 356   |
| 0.8      | 5.2      | - | 20      | 722      | 1191  | 1.0 | 174.375 | GSS07-2M□□□080C42 | E84AV□□□3024□□S | 356   |
| 0.8      | 5.1      | - | 20      | 718      | 1136  | 1.1 | 175.000 | GSS07-3M□□□080C42 | E84AV□□□3024□□S | 364   |
| 0.7      | 4.6      | - | 18      | 818      | 1333  | 0.9 | 196.875 | GSS07-2M□□□080C42 | E84AV□□□3024□□S | 356   |
| 0.7      | 4.5      | - | 17      | 825      | 1311  | 1.0 | 201.746 | GSS07-3M□□□080C42 | E84AV□□□3024□□S | 364   |



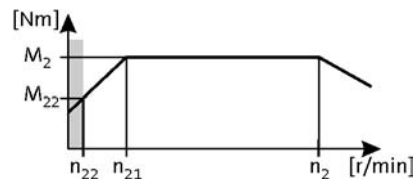
# GSS

GSS [Nm] - MF□MA

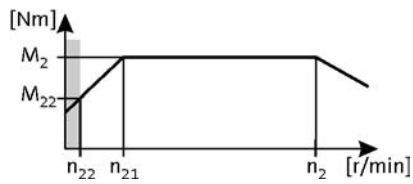
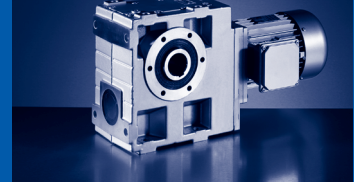
120 Hz:  $P_N = 4.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 145.0 \dots 3480 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$     |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|---------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |         |                   |                 |     |
| 15       | 61       | - | 352     | 65       | 98    | 1.2 | 9.897   | GSS04-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 15       | 61       | - | 352     | 64       | 98    | 1.8 | 9.897   | GSS05-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 14       | 59       | - | 340     | 67       | 101   | 2.8 | 10.238  | GSS06-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 13       | 55       | - | 321     | 70       | 107   | 1.2 | 10.827  | GSS04-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 13       | 55       | - | 321     | 71       | 107   | 1.8 | 10.827  | GSS05-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 13       | 54       | - | 311     | 73       | 110   | 2.7 | 11.200  | GSS06-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 11       | 43       | - | 252     | 89       | 137   | 1.1 | 13.810  | GSS04-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 11       | 43       | - | 252     | 89       | 137   | 1.6 | 13.810  | GSS05-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 10       | 42       | - | 244     | 91       | 142   | 2.5 | 14.286  | GSS06-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 9.1      | 38       | - | 219     | 99       | 153   | 1.4 | 15.869  | GSS05-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 9.1      | 38       | - | 219     | 99       | 155   | 2.1 | 15.869  | GSS06-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 8.4      | 35       | - | 201     | 108      | 168   | 1.4 | 17.360  | GSS05-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 8.4      | 35       | - | 201     | 107      | 169   | 2.1 | 17.360  | GSS06-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 6.6      | 27       | - | 157     | 136      | 215   | 1.2 | 22.143  | GSS05-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 6.6      | 27       | - | 157     | 135      | 216   | 1.9 | 22.143  | GSS06-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 6.6      | 27       | - | 157     | 139      | 215   | 2.9 | 22.143  | GSS07-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 5.4      | 22       | - | 128     | 164      | 264   | 1.0 | 27.125  | GSS05-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 5.4      | 22       | - | 128     | 165      | 264   | 1.8 | 27.125  | GSS06-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 4.6      | 19       | - | 110     | 181      | 292   | 1.3 | 31.738  | GSS06-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 4.1      | 17       | - | 99      | 211      | 344   | 1.7 | 35.306  | GSS06-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 4.1      | 17       | - | 99      | 217      | 344   | 2.6 | 35.306  | GSS07-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 3.7      | 15       | - | 89      | 221      | 357   | 1.2 | 39.200  | GSS06-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 3.4      | 14       | - | 80      | 263      | 421   | 2.4 | 43.271  | GSS07-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 3.3      | 14       | - | 79      | 259      | 427   | 1.5 | 43.917  | GSS06-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 2.9      | 12       | - | 70      | 275      | 455   | 1.1 | 50.000  | GSS06-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 2.9      | 12       | - | 70      | 285      | 460   | 1.7 | 50.000  | GSS07-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 2.7      | 11       | - | 64      | 295      | 497   | 1.1 | 54.250  | GSS06-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 2.4      | 9.8      | - | 57      | 330      | 556   | 1.0 | 61.250  | GSS06-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 2.1      | 8.5      | - | 49      | 372      | 644   | 0.9 | 70.611  | GSS06-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 2.1      | 8.5      | - | 49      | 391      | 654   | 1.6 | 70.611  | GSS07-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 1.8      | 7.5      | - | 44      | 438      | 731   | 1.5 | 79.722  | GSS07-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 1.7      | 6.9      | - | 40      | 469      | 801   | 1.5 | 86.542  | GSS07-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 1.5      | 6.1      | - | 36      | 526      | 896   | 1.3 | 97.708  | GSS07-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 1.3      | 5.3      | - | 31      | 603      | 1049  | 1.2 | 113.667 | GSS07-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 1.2      | 4.7      | - | 28      | 658      | 1113  | 1.1 | 126.531 | GSS07-3M□□□090C32 | E84AV□□□4024□□□ | 364 |
| 1.1      | 4.7      | - | 27      | 678      | 1173  | 1.1 | 128.333 | GSS07-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 1.1      | 4.4      | - | 25      | 723      | 1268  | 1.0 | 137.950 | GSS07-2M□□□090C32 | E84AV□□□4024□□□ | 356 |
| 1.0      | 4.2      | - | 24      | 739      | 1246  | 1.0 | 142.857 | GSS07-3M□□□090C32 | E84AV□□□4024□□□ | 364 |
| 0.9      | 3.9      | - | 23      | 799      | 1357  | 0.9 | 155.000 | GSS07-3M□□□090C32 | E84AV□□□4024□□□ | 364 |

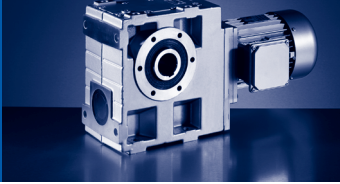


120 Hz:  $P_N = 5.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 146.9 \dots 3525 \text{ r/min}$

| $n_{22}$<br>[r/min] | $n_{21}$<br>[r/min] |   | $n_2$<br>[r/min] | $M_{22}$<br>[Nm] | $M_2$<br>[Nm] | c   | i      |                   |                 |     |
|---------------------|---------------------|---|------------------|------------------|---------------|-----|--------|-------------------|-----------------|-----|
| 15                  | 61                  | - | 356              | 89               | 133           | 1.3 | 9.897  | GSS05-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 15                  | 60                  | - | 353              | 88               | 135           | 3.0 | 10.000 | GSS07-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 14                  | 59                  | - | 344              | 91               | 138           | 2.0 | 10.238 | GSS06-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 14                  | 55                  | - | 326              | 97               | 146           | 1.3 | 10.827 | GSS05-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 13                  | 54                  | - | 315              | 99               | 151           | 2.0 | 11.200 | GSS06-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 13                  | 54                  | - | 315              | 98               | 151           | 3.0 | 11.200 | GSS07-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 11                  | 43                  | - | 255              | 122              | 187           | 1.2 | 13.810 | GSS05-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 10                  | 42                  | - | 247              | 126              | 194           | 1.8 | 14.286 | GSS06-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 10                  | 42                  | - | 247              | 125              | 194           | 2.8 | 14.286 | GSS07-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 9.5                 | 39                  | - | 227              | 131              | 206           | 2.4 | 15.500 | GSS07-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 9.3                 | 38                  | - | 222              | 136              | 208           | 1.1 | 15.869 | GSS05-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 9.3                 | 38                  | - | 222              | 135              | 211           | 1.6 | 15.869 | GSS06-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 8.5                 | 35                  | - | 203              | 148              | 229           | 1.0 | 17.360 | GSS05-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 8.5                 | 35                  | - | 203              | 148              | 231           | 1.5 | 17.360 | GSS06-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 8.5                 | 35                  | - | 203              | 146              | 231           | 2.3 | 17.360 | GSS07-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 6.6                 | 27                  | - | 159              | 187              | 295           | 1.4 | 22.143 | GSS06-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 6.6                 | 27                  | - | 159              | 187              | 295           | 2.1 | 22.143 | GSS07-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 5.4                 | 22                  | - | 130              | 227              | 361           | 1.4 | 27.125 | GSS06-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 5.4                 | 22                  | - | 130              | 229              | 361           | 2.0 | 27.125 | GSS07-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 4.7                 | 19                  | - | 114              | 249              | 392           | 1.4 | 31.000 | GSS07-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 4.6                 | 19                  | - | 111              | 249              | 398           | 0.9 | 31.738 | GSS06-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 4.2                 | 17                  | - | 100              | 290              | 469           | 1.2 | 35.306 | GSS06-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 4.2                 | 17                  | - | 100              | 297              | 470           | 1.9 | 35.306 | GSS07-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 3.8                 | 15                  | - | 90               | 313              | 492           | 1.3 | 39.200 | GSS07-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 3.4                 | 14                  | - | 82               | 360              | 576           | 1.8 | 43.271 | GSS07-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 3.3                 | 14                  | - | 80               | 355              | 583           | 1.1 | 43.917 | GSS06-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 2.9                 | 12                  | - | 71               | 393              | 628           | 1.2 | 50.000 | GSS07-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 2.7                 | 11                  | - | 65               | 422              | 687           | 1.2 | 54.250 | GSS07-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 2.4                 | 9.8                 | - | 58               | 474              | 768           | 1.2 | 61.250 | GSS07-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 2.1                 | 8.5                 | - | 50               | 537              | 892           | 1.1 | 70.611 | GSS07-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 1.8                 | 7.5                 | - | 44               | 601              | 997           | 1.1 | 79.722 | GSS07-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 1.7                 | 6.9                 | - | 41               | 644              | 1092          | 1.1 | 86.542 | GSS07-2M□□□100C12 | E84AV□□□5524□□□ | 356 |
| 1.5                 | 6.1                 | - | 36               | 720              | 1221          | 1.0 | 97.708 | GSS07-2M□□□100C12 | E84AV□□□5524□□□ | 356 |



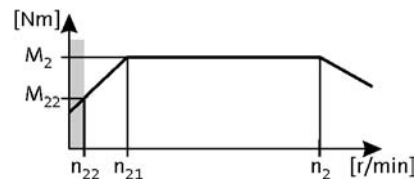
# GSS

GSS [Nm] - MF□MA

120 Hz:  $P_N = 7.50 \text{ kW}$

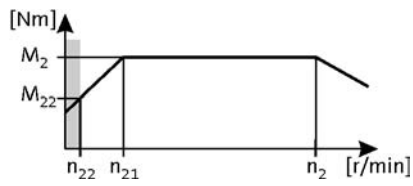
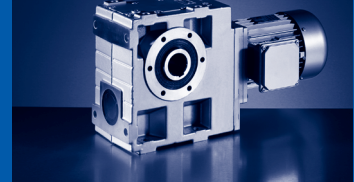
$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 146.5 \dots 3515 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 15       | 61       | - | 355     | 122      | 183   | 1.0 | 9.897  | GSS05-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 15       | 60       | - | 352     | 123      | 186   | 2.2 | 10.000 | GSS07-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 14       | 59       | - | 343     | 126      | 190   | 1.5 | 10.238 | GSS06-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 14       | 55       | - | 325     | 133      | 201   | 1.0 | 10.827 | GSS05-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 13       | 54       | - | 314     | 138      | 208   | 1.5 | 11.200 | GSS06-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 13       | 54       | - | 314     | 137      | 209   | 2.2 | 11.200 | GSS07-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 10       | 42       | - | 246     | 174      | 266   | 1.3 | 14.286 | GSS06-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 10       | 42       | - | 246     | 175      | 267   | 2.0 | 14.286 | GSS07-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 9.5      | 39       | - | 227     | 184      | 283   | 1.7 | 15.500 | GSS07-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 9.2      | 38       | - | 222     | 187      | 290   | 1.1 | 15.869 | GSS06-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 8.4      | 35       | - | 203     | 205      | 318   | 1.1 | 17.360 | GSS06-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 8.4      | 35       | - | 203     | 205      | 318   | 1.7 | 17.360 | GSS07-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 6.6      | 27       | - | 159     | 258      | 405   | 1.0 | 22.143 | GSS06-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 6.6      | 27       | - | 159     | 261      | 406   | 1.6 | 22.143 | GSS07-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 5.4      | 22       | - | 130     | 313      | 496   | 1.0 | 27.125 | GSS06-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 5.4      | 22       | - | 130     | 319      | 497   | 1.5 | 27.125 | GSS07-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 4.7      | 19       | - | 113     | 346      | 538   | 1.1 | 31.000 | GSS07-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 4.2      | 17       | - | 100     | 400      | 644   | 0.9 | 35.306 | GSS06-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 4.2      | 17       | - | 100     | 411      | 647   | 1.4 | 35.306 | GSS07-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 3.7      | 15       | - | 90      | 434      | 676   | 1.0 | 39.200 | GSS07-2M□□□100C32 | E84AV□□□7524□□□ | 356 |
| 3.4      | 14       | - | 81      | 498      | 791   | 1.3 | 43.271 | GSS07-2M□□□100C32 | E84AV□□□7524□□□ | 356 |



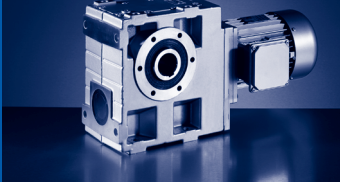


120 Hz:  $P_N = 11.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 147.1 \dots 3530 \text{ r/min}$

| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 15       | 60       | - | 353     | 166      | 274   | 1.5 | 10.000 | GSS07-2M□□□112C22 | E84AV□□□1134□□□ | 356 |
| 14       | 59       | - | 345     | 170      | 278   | 1.0 | 10.238 | GSS06-2M□□□112C22 | E84AV□□□1134□□□ | 356 |
| 13       | 54       | - | 315     | 186      | 305   | 1.0 | 11.200 | GSS06-2M□□□112C22 | E84AV□□□1134□□□ | 356 |
| 13       | 54       | - | 315     | 186      | 307   | 1.5 | 11.200 | GSS07-2M□□□112C22 | E84AV□□□1134□□□ | 356 |
| 10       | 42       | - | 247     | 235      | 390   | 0.9 | 14.286 | GSS06-2M□□□112C22 | E84AV□□□1134□□□ | 356 |
| 10       | 42       | - | 247     | 237      | 392   | 1.4 | 14.286 | GSS07-2M□□□112C22 | E84AV□□□1134□□□ | 356 |
| 9.5      | 39       | - | 228     | 249      | 416   | 1.2 | 15.500 | GSS07-2M□□□112C22 | E84AV□□□1134□□□ | 356 |
| 8.5      | 35       | - | 203     | 279      | 467   | 1.1 | 17.360 | GSS07-2M□□□112C22 | E84AV□□□1134□□□ | 356 |
| 6.6      | 27       | - | 159     | 354      | 596   | 1.1 | 22.143 | GSS07-2M□□□112C22 | E84AV□□□1134□□□ | 356 |
| 5.4      | 22       | - | 130     | 430      | 729   | 1.0 | 27.125 | GSS07-2M□□□112C22 | E84AV□□□1134□□□ | 356 |
| 4.2      | 17       | - | 100     | 553      | 949   | 0.9 | 35.306 | GSS07-2M□□□112C22 | E84AV□□□1134□□□ | 356 |



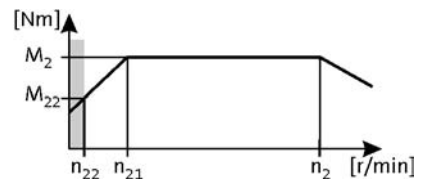
# GSS

GSS [Nm] - MF□MA

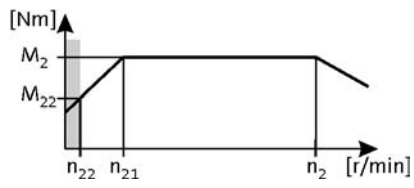
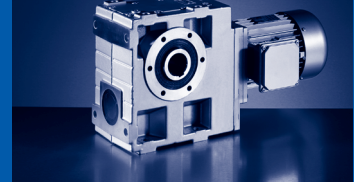
120 Hz:  $P_N = 15.00 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

$n_1 = 148.3 \dots 3560 \text{ r/min}$



| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 15       | 60       | - | 356     | 225      | 371   | 1.1 | 10.000 | GSS07-2M□□□132C12 | E84AV□□□1534□□□ | 356 |
| 13       | 54       | - | 318     | 253      | 416   | 1.1 | 11.200 | GSS07-2M□□□132C12 | E84AV□□□1534□□□ | 356 |
| 10       | 42       | - | 249     | 322      | 532   | 1.0 | 14.286 | GSS07-2M□□□132C12 | E84AV□□□1534□□□ | 356 |

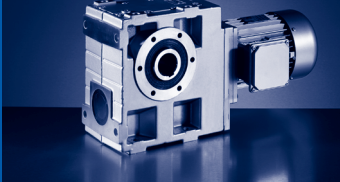


120 Hz:  $P_N = 18.50 \text{ kW}$

$n_{22} / n_2 = 1 \dots 24.0$

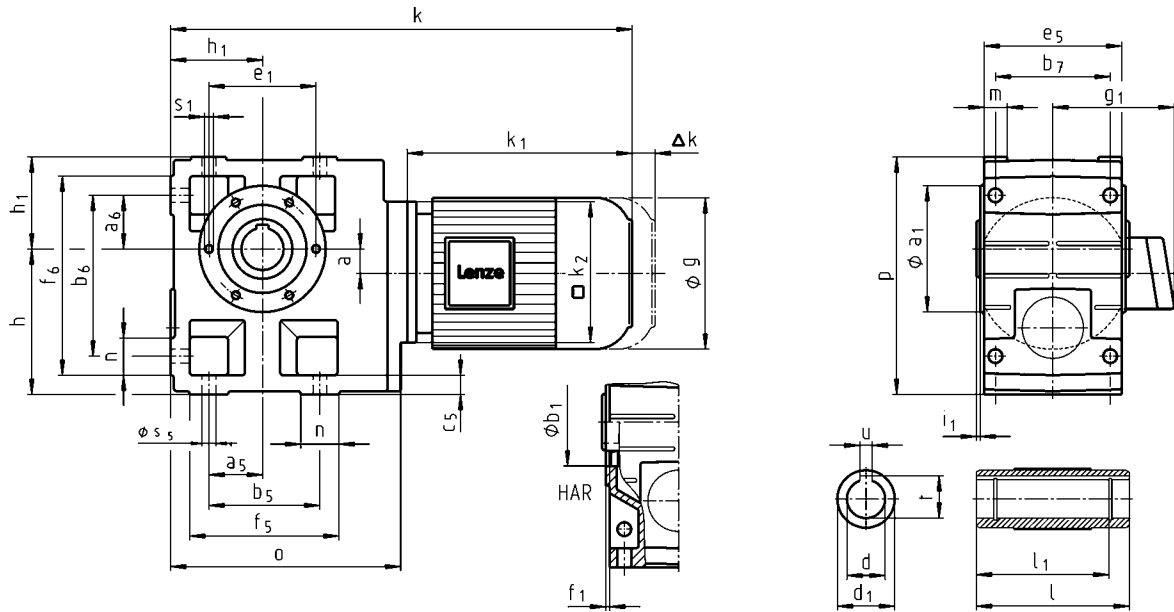
$n_1 = 148.3 \dots 3560 \text{ r/min}$

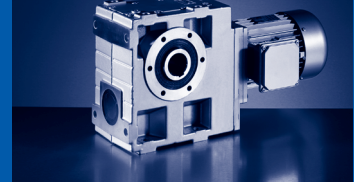
| $n_{22}$ | $n_{21}$ |   | $n_2$   | $M_{22}$ | $M_2$ | $c$ | $i$    |                   |                 |     |
|----------|----------|---|---------|----------|-------|-----|--------|-------------------|-----------------|-----|
| [r/min]  | [r/min]  |   | [r/min] | [Nm]     | [Nm]  |     |        |                   |                 |     |
| 15       | 60       | - | 356     | 280      | 459   | 0.9 | 10.000 | GSS07-2M□□□132C22 | E84AV□□□1834□□0 | 356 |



**GSS**  
GSS [mm] - MF□MA

**GSS□□-2M H□R**





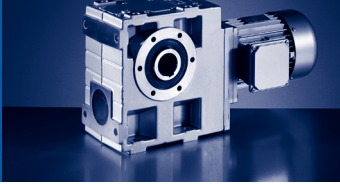
|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32 | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 |
|----------------------|---------|------------------|------------------|------------------|--------|------------------|--------|------------------|
| <b>g</b>             |         | 123              | 139              | 156              | 176    | 194              | 218    | 258              |
| <b>B1</b>            | MFEMAXX | 100              | 109              | 141              | 146    | 157              | 167    | 195              |
|                      | MFEMABR | 107              | 118              | 132              | 137    | 147              | 158    | 187              |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              | 224.5            | 274    | 324              | 363    | 403              |
| <b>k<sub>2</sub></b> |         | 120              |                  | 145              | 180    |                  | 222    | 265              |
|                      | MFEMABR | 40               | 52               | 73               | 68     | 76               | 90     | 109.5            |
| <b>Δ k</b>           | MFEMAXX | 128              |                  |                  |        | 109              | 102    | 115              |
|                      | MFEMABR | 170              | 165              | 183              | 181    | 170              | 183    | 201.5            |
|                      |         | <b>k</b>         |                  |                  |        |                  |        |                  |
| <b>GSS04</b>         |         | 377              | 397              | 420              | 479    |                  |        |                  |
| <b>GSS05</b>         |         | 399              | 419              | 441              | 501    | 551              |        |                  |
| <b>GSS06</b>         |         | 439              | 459              | 481              | 541    | 591              | 636    |                  |
| <b>GSS07</b>         |         |                  |                  | 524              | 584    | 634              | 679    | 727              |

|              | a  | h <sup>1)</sup> | h <sub>1</sub> | o   | p <sup>1)</sup> |
|--------------|----|-----------------|----------------|-----|-----------------|
| <b>GSS04</b> | 20 | 100             | 71             | 181 | 171             |
| <b>GSS05</b> | 23 | 125             | 80             | 212 | 205             |
| <b>GSS06</b> | 26 | 150             | 100            | 255 | 250             |
| <b>GSS07</b> | 33 | 190             | 120            | 305 | 310             |

|              | d  | d <sub>1</sub> | l <sup>1)</sup> | l <sub>1</sub> | u   | t    | i <sub>1</sub> | a <sub>1</sub> | b <sub>1</sub> | e <sub>1</sub> | f <sub>1</sub> | s <sub>1</sub> |
|--------------|----|----------------|-----------------|----------------|-----|------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | H7 |                |                 |                | JS9 | +0,2 |                |                | H7             |                |                |                |
| <b>GSS04</b> | 25 | 45             | 115             | 100            | 8   | 28.3 | 2.5            | 104            | 75             | 90             | 3              | M6x12          |
|              | 30 | 45             | 115             | 100            | 8   | 33.3 | 2.5            |                |                |                |                |                |
| <b>GSS05</b> | 30 | 50             | 140             | 124            | 8   | 33.3 | 4              | 118            | 80             | 100            | 4              | M8x15          |
|              | 35 | 50             | 140             | 124            | 10  | 38.3 | 4              |                |                |                |                |                |
| <b>GSS06</b> | 40 | 65             | 160             | 140            | 12  | 43.3 | 5              | 140            | 100            | 120            | 4              | M10x16         |
|              | 45 | 65             | 160             | 140            | 14  | 48.8 | 5              |                |                |                |                |                |
| <b>GSS07</b> | 50 | 75             | 200             | 175            | 14  | 53.8 | 5              | 165            | 115            | 140            | 5              | M12x18         |
|              | 55 | 75             | 200             | 175            | 16  | 59.3 | 5              |                |                |                |                |                |

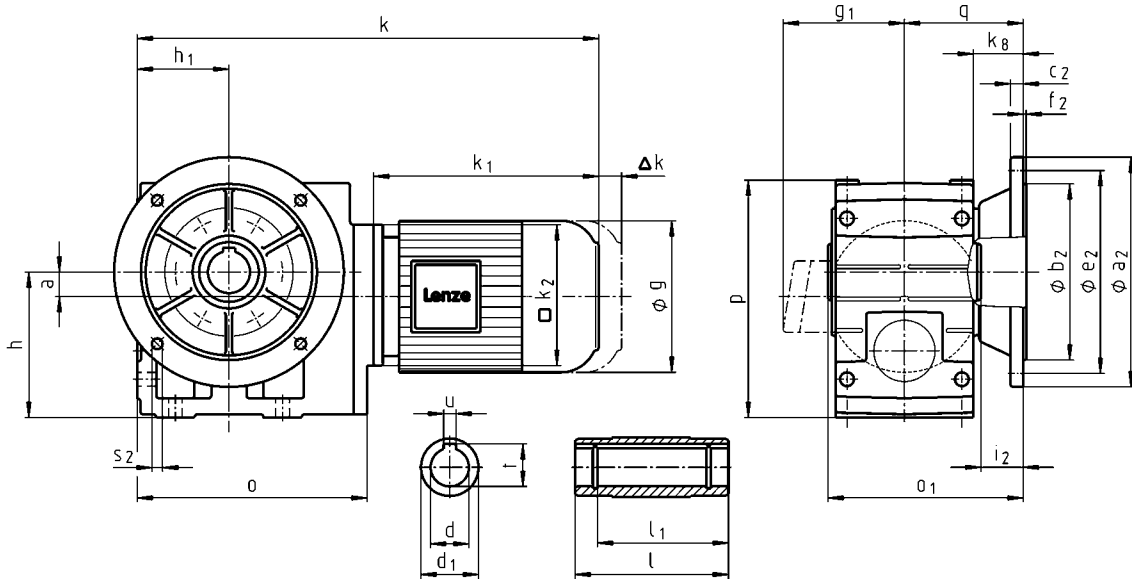
|              | a <sub>5</sub> | a <sub>6</sub> | b <sub>5</sub> | b <sub>6</sub> | b <sub>7</sub> | c <sub>5</sub> | e <sub>5</sub> | f <sub>5</sub> | f <sub>6</sub> | m  | n  | s <sub>5</sub> |
|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|----|----------------|
| <b>GSS04</b> | 45             | 45             | 90             | 119            | 85             | 14             | 100            | 112            | 141            | 20 | 22 | 9              |
| <b>GSS05</b> | 47.5           | 47.5           | 95             | 140            | 105            | 17             | 127            | 124            | 169            | 21 | 29 | 11             |
| <b>GSS06</b> | 60             | 60             | 120            | 170            | 120            | 20             | 145            | 156            | 206            | 23 | 36 | 14             |
| <b>GSS07</b> | 70             | 70             | 140            | 210            | 150            | 25             | 180            | 185            | 255            | 28 | 45 | 18             |

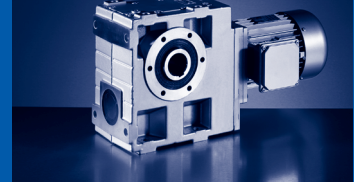
<sup>1)</sup> k<sub>2</sub> !



**GSS**  
GSS [mm] - MF□MA

**GSS□□-2M HAK**



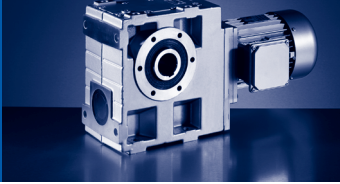


|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32   | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 |
|----------------------|---------|------------------|------------------|------------------|----------|------------------|--------|------------------|
| <b>g</b>             |         | 123              | 139              | 156              | 176      | 194              | 218    | 258              |
| <b>B1</b>            | MFEMAXX | 100              | 109              | 141              | 146      | 157              | 167    | 195              |
|                      | MFEMABR | 107              | 118              | 132              | 137      | 147              | 158    | 187              |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              | 224.5            | 274      | 324              | 363    | 403              |
| <b>k<sub>2</sub></b> |         | 120              |                  | 145              | 180      |                  | 222    | 265              |
|                      | MFEMABR | 40               | 52               | 73               | 68       | 76               | 90     | 109.5            |
| <b>Δ k</b>           | MFEMAXX | 128              |                  |                  |          | 109              | 102    | 115              |
|                      | MFEMABR | 170              | 165              | 183              | 181      | 170              | 183    | 201.5            |
|                      |         |                  |                  |                  | <b>k</b> |                  |        |                  |
| <b>GSS04</b>         |         | 377              | 397              | 420              | 479      |                  |        |                  |
| <b>GSS05</b>         |         | 399              | 419              | 441              | 501      | 551              |        |                  |
| <b>GSS06</b>         |         | 439              | 459              | 481              | 541      | 591              | 636    |                  |
| <b>GSS07</b>         |         |                  |                  | 524              | 584      | 634              | 679    | 727              |

|              | a  | h <sup>1)</sup> | h <sub>1</sub> | k <sub>g</sub> | o   | p <sup>1)</sup> | q     |
|--------------|----|-----------------|----------------|----------------|-----|-----------------|-------|
| <b>GSS04</b> | 20 | 100             | 71             | 41             | 181 | 171             | 91    |
| <b>GSS05</b> | 23 | 125             | 80             | 40             | 212 | 205             | 103.5 |
| <b>GSS06</b> | 26 | 150             | 100            | 49             | 255 | 250             | 121.5 |
| <b>GSS07</b> | 33 | 190             | 120            | 65.5           | 305 | 310             | 155.5 |

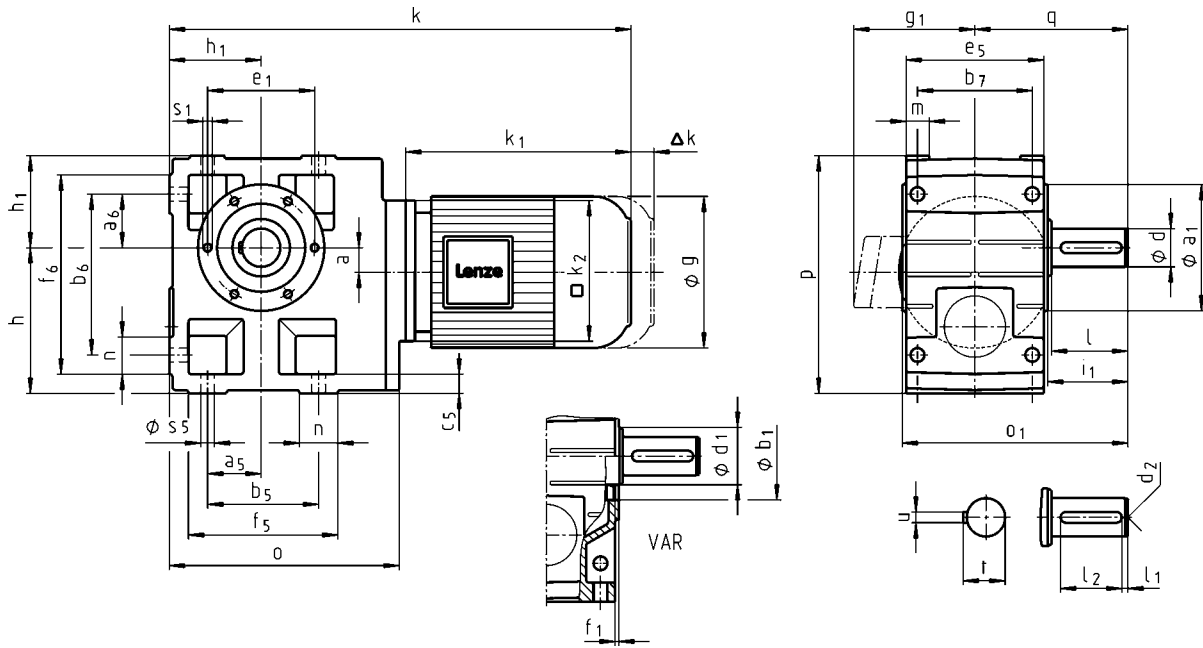
|              | d  | d <sub>1</sub> | l   | l <sub>1</sub> | u   | t    | i <sub>2</sub> | o <sub>1</sub> <sup>1)</sup> | a <sub>2</sub> | b <sub>2</sub> | c <sub>2</sub> | e <sub>2</sub> | f <sub>2</sub> | s <sub>2</sub> |
|--------------|----|----------------|-----|----------------|-----|------|----------------|------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | H7 |                |     |                | JS9 | +0,2 |                |                              |                | j7             |                |                |                |                |
| <b>GSS04</b> | 25 | 45             | 115 | 100            | 8   | 28.3 | 33             | 148.5                        | 160            | 110            | 10             | 130            | 3.5            | 4 x 9          |
|              | 30 | 45             | 115 | 100            | 8   | 33.3 | 33             | 148.5                        |                |                |                |                |                |                |
| <b>GSS05</b> | 30 | 50             | 140 | 124            | 8   | 33.3 | 33             | 173.5                        | 200            | 130            | 12             | 165            | 4              | 4 x 11         |
|              | 35 | 50             | 140 | 124            | 10  | 38.3 | 33             | 173.5                        |                |                |                |                |                |                |
| <b>GSS06</b> | 40 | 65             | 160 | 140            | 12  | 43.3 | 42             | 201.5                        | 250            | 180            | 15             | 215            | 4              | 4 x 14         |
|              | 45 | 65             | 160 | 140            | 14  | 48.8 | 41             | 201.5                        |                |                |                |                |                |                |
| <b>GSS07</b> | 50 | 75             | 200 | 175            | 14  | 53.8 | 55             | 255.5                        | 250            | 180            | 15             | 215            | 4              | 4 x 14         |
|              | 55 | 75             | 200 | 175            | 16  | 59.3 | 55             | 255.5                        |                |                |                |                |                |                |

<sup>1)</sup> k<sub>2</sub> !

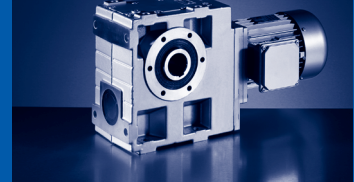


**GSS**  
GSS [mm] - MF□MA

**GSS□□-2M V□R**







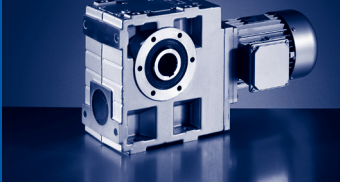
|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32   | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 |
|----------------------|---------|------------------|------------------|------------------|----------|------------------|--------|------------------|
| <b>g</b>             |         | 123              | 139              | 156              | 176      | 194              | 218    | 258              |
| <b>B1</b>            | MFEMAXX | 100              | 109              | 141              | 146      | 157              | 167    | 195              |
|                      | MFEMABR | 107              | 118              | 132              | 137      | 147              | 158    | 187              |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              | 224.5            | 274      | 324              | 363    | 403              |
| <b>k<sub>2</sub></b> |         | 120              |                  | 145              | 180      |                  | 222    | 265              |
|                      | MFEMABR | 40               | 52               | 73               | 68       | 76               | 90     | 109.5            |
| <b>Δ k</b>           | MFEMAXX | 128              |                  |                  |          | 109              | 102    | 115              |
|                      | MFEMABR | 170              | 165              | 183              | 181      | 170              | 183    | 201.5            |
|                      |         |                  |                  |                  | <b>k</b> |                  |        |                  |
| <b>GSS04</b>         |         | 377              | 397              | 420              | 479      |                  |        |                  |
| <b>GSS05</b>         |         | 399              | 419              | 441              | 501      | 551              |        |                  |
| <b>GSS06</b>         |         | 439              | 459              | 481              | 541      | 591              | 636    |                  |
| <b>GSS07</b>         |         |                  |                  | 524              | 584      | 634              | 679    | 727              |

|              | a  | h <sup>1)</sup> | h <sub>1</sub> | o   | p <sup>1)</sup> | q     |
|--------------|----|-----------------|----------------|-----|-----------------|-------|
| <b>GSS04</b> | 20 | 100             | 71             | 181 | 171             | 107.5 |
| <b>GSS05</b> | 23 | 125             | 80             | 212 | 205             | 130   |
| <b>GSS06</b> | 26 | 150             | 100            | 255 | 250             | 160   |
| <b>GSS07</b> | 33 | 190             | 120            | 305 | 310             | 200   |

|              | d  | d <sub>1</sub> | d <sub>2</sub> | l   | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i <sub>1</sub> | o <sub>1</sub> <sup>1)</sup> | a <sub>1</sub> | b <sub>1</sub> | e <sub>1</sub> | f <sub>1</sub> | s <sub>1</sub> |
|--------------|----|----------------|----------------|-----|----------------|----------------|----|------|----------------|------------------------------|----------------|----------------|----------------|----------------|----------------|
|              | k6 |                |                |     |                |                |    |      |                |                              |                | H7             |                |                |                |
| <b>GSS04</b> | 25 | 45             | M10            | 50  | 6              | 40             | 8  | 28   | 52.5           | 162.5                        | 104            | 75             | 90             | 3              | M6x12          |
| <b>GSS05</b> | 30 | 45             | M10            | 60  | 6              | 45             | 8  | 33   | 64             | 196.5                        | 118            | 80             | 100            | 4              | M8x15          |
| <b>GSS06</b> | 40 | 65             | M16            | 80  | 7              | 63             | 12 | 43   | 85             | 235.5                        | 140            | 100            | 120            | 4              | M10x16         |
| <b>GSS07</b> | 50 | 75             | M16            | 100 | 8              | 80             | 14 | 53.5 | 105            | 295.5                        | 165            | 115            | 140            | 5              | M12x18         |

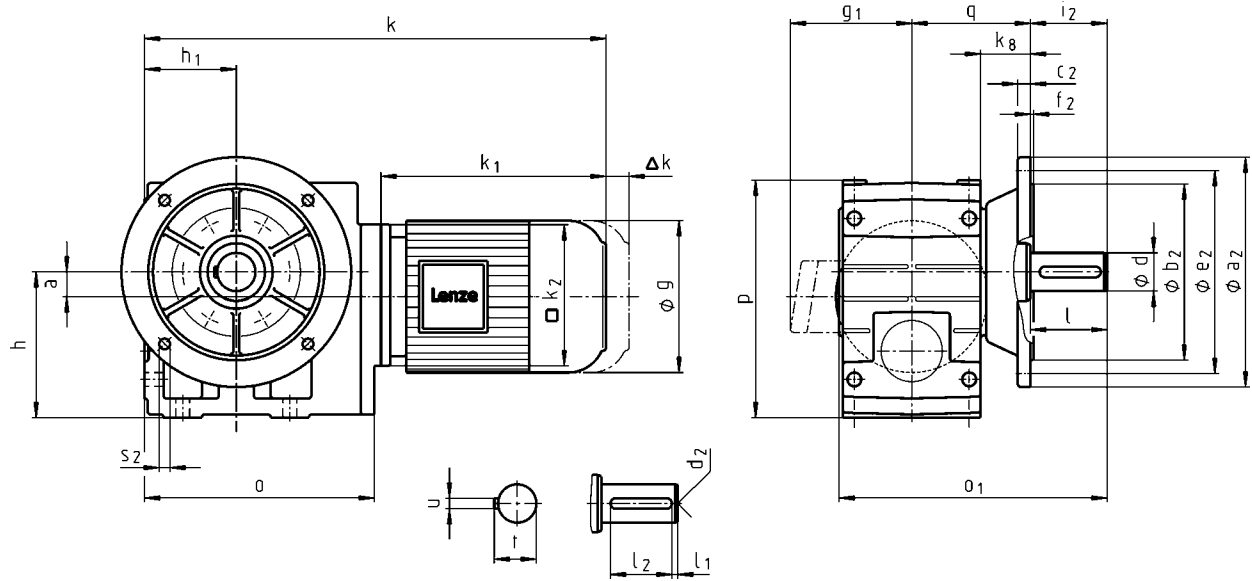
|              | a <sub>5</sub> | a <sub>6</sub> | b <sub>5</sub> | b <sub>6</sub> | b <sub>7</sub> | c <sub>5</sub> | e <sub>5</sub> | f <sub>5</sub> | f <sub>6</sub> | m  | n  | s <sub>5</sub> |
|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|----|----------------|
| <b>GSS04</b> | 45             | 45             | 90             | 119            | 85             | 14             | 100            | 112            | 141            | 20 | 22 | 9              |
| <b>GSS05</b> | 47.5           | 47.5           | 95             | 140            | 105            | 17             | 127            | 124            | 169            | 21 | 29 | 11             |
| <b>GSS06</b> | 60             | 60             | 120            | 170            | 120            | 20             | 145            | 156            | 206            | 23 | 36 | 14             |
| <b>GSS07</b> | 70             | 70             | 140            | 210            | 150            | 25             | 180            | 185            | 255            | 28 | 45 | 18             |

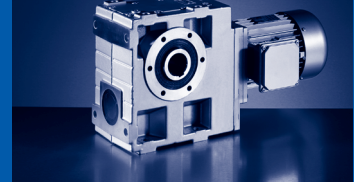
<sup>1)</sup> k<sub>2</sub> !



**GSS**  
GSS [mm] - MF□MA

**GSS□□-2M VAK**



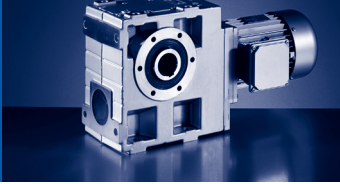


|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32<br>080C42 | 090C32   | 100C12<br>100C32 | 112C22 | 132C12<br>132C22 |
|----------------------|---------|------------------|------------------|------------------|----------|------------------|--------|------------------|
| <b>g</b>             |         | 123              | 139              | 156              | 176      | 194              | 218    | 258              |
| <b>B1</b>            | MFEMAXX | 100              | 109              | 141              | 146      | 157              | 167    | 195              |
|                      | MFEMABR | 107              | 118              | 132              | 137      | 147              | 158    | 187              |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              | 224.5            | 274      | 324              | 363    | 403              |
| <b>k<sub>2</sub></b> |         | 120              |                  | 145              | 180      |                  | 222    | 265              |
|                      | MFEMABR | 40               | 52               | 73               | 68       | 76               | 90     | 109.5            |
| <b>Δ k</b>           | MFEMAXX | 128              |                  |                  |          | 109              | 102    | 115              |
|                      | MFEMABR | 170              | 165              | 183              | 181      | 170              | 183    | 201.5            |
|                      |         |                  |                  |                  | <b>k</b> |                  |        |                  |
| <b>GSS04</b>         |         | 377              | 397              | 420              | 479      |                  |        |                  |
| <b>GSS05</b>         |         | 399              | 419              | 441              | 501      | 551              |        |                  |
| <b>GSS06</b>         |         | 439              | 459              | 481              | 541      | 591              | 636    |                  |
| <b>GSS07</b>         |         |                  |                  | 524              | 584      | 634              | 679    | 727              |

|              | a  | h <sup>1)</sup> | h <sub>1</sub> | k <sub>g</sub> | o   | p <sup>1)</sup> | q     |
|--------------|----|-----------------|----------------|----------------|-----|-----------------|-------|
| <b>GSS04</b> | 20 | 100             | 71             | 41             | 181 | 171             | 91    |
| <b>GSS05</b> | 23 | 125             | 80             | 40             | 212 | 205             | 103.5 |
| <b>GSS06</b> | 26 | 150             | 100            | 49             | 255 | 250             | 121.5 |
| <b>GSS07</b> | 33 | 190             | 120            | 65.5           | 305 | 310             | 155.5 |

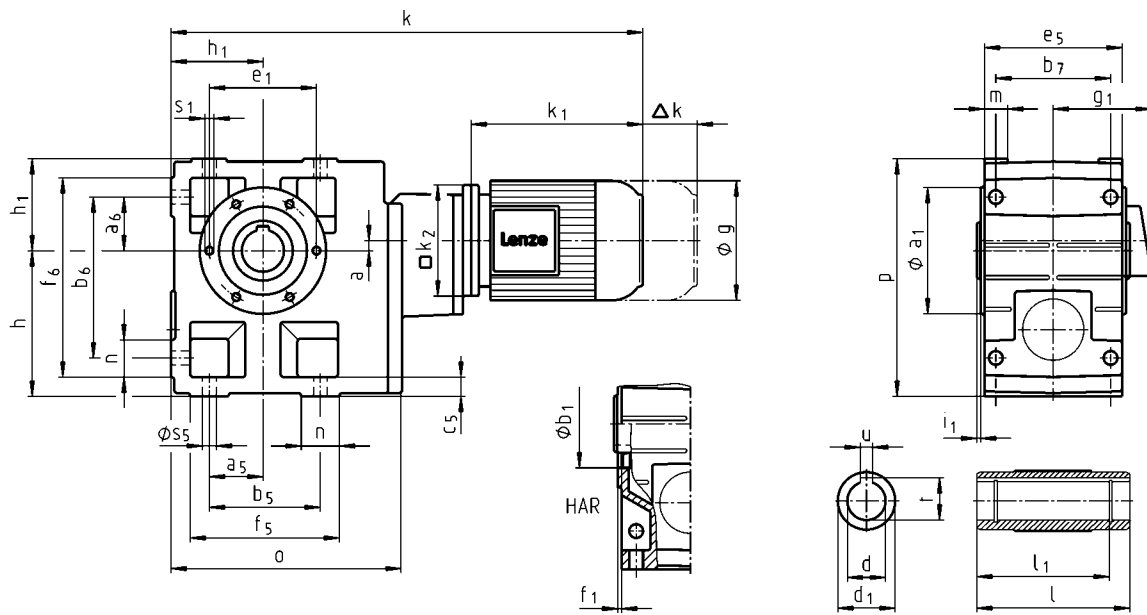
|              | d  | d <sub>2</sub> | l   | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i <sub>2</sub> | o <sub>1</sub> <sup>1)</sup> | a <sub>2</sub> | b <sub>2</sub> | c <sub>2</sub> | e <sub>2</sub> | f <sub>2</sub> | s <sub>2</sub> |
|--------------|----|----------------|-----|----------------|----------------|----|------|----------------|------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | k6 |                |     |                |                |    |      |                |                              |                | j7             |                |                |                |                |
| <b>GSS04</b> | 25 | M10            | 50  | 6              | 40             | 8  | 28   | 50             | 195.5                        | 160            | 110            | 10             | 130            | 3.5            | 4 x 9          |
| <b>GSS05</b> | 30 | M10            | 60  | 6              | 45             | 8  | 33   | 60             | 229.5                        | 200            | 130            | 12             | 165            | 4              | 4 x 11         |
| <b>GSS06</b> | 40 | M16            | 80  | 7              | 63             | 12 | 43   | 80             | 276.5                        | 250            | 180            | 15             | 215            | 4              | 4 x 14         |
| <b>GSS07</b> | 50 | M16            | 100 | 8              | 80             | 14 | 53.5 | 100            | 350.5                        | 250            | 180            | 15             | 215            | 4              | 4 x 14         |
|              |    |                |     |                |                |    |      |                |                              | 300            | 230            | 17             | 265            | 4              | 4 x 14         |

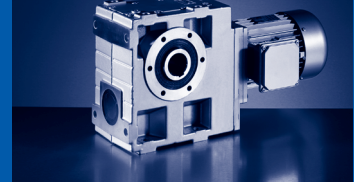
<sup>1)</sup> k<sub>2</sub> !



**GSS**  
GSS [mm] - MF□MA

**GSS□□-3M H□R**



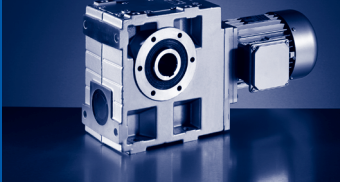


|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 | 090C32 |
|----------------------|---------|------------------|------------------|--------|--------|--------|
| <b>g</b>             |         | 123              | 139              |        | 156    | 176    |
| <b>B1</b>            | MFEMAXX | 100              | 109              |        | 141    | 146    |
|                      | MFEMABR | 107              | 118              |        | 132    | 137    |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              |        | 224.5  | 274    |
| <b>k<sub>2</sub></b> |         | 120              |                  |        | 145    | 180    |
|                      | MFEMABR | 40               | 52               |        | 73     | 68     |
| <b>Δ k</b>           | MFFMAXX |                  |                  | 128    |        |        |
|                      | MFFMABR | 170              | 165              |        | 183    | 181    |
|                      |         | <b>k</b>         |                  |        |        |        |
| <b>GSS05</b>         |         | 475              |                  |        |        |        |
| <b>GSS06</b>         |         | 532              | 552              | 575    |        |        |
| <b>GSS07</b>         |         | 586              | 606              |        | 629    | 688    |

|              | a  | h   | h <sub>1</sub> | o   | p   |
|--------------|----|-----|----------------|-----|-----|
| <b>GSS05</b> | 13 | 125 | 80             | 209 | 205 |
| <b>GSS06</b> | 10 | 150 | 100            | 252 | 250 |
| <b>GSS07</b> | 12 | 190 | 120            | 299 | 310 |

|              | d  | d <sub>1</sub> | l   | l <sub>1</sub> | u   | t    | i <sub>1</sub> | a <sub>1</sub> | b <sub>1</sub> | e <sub>1</sub> | f <sub>1</sub> | s <sub>1</sub> |
|--------------|----|----------------|-----|----------------|-----|------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | H7 |                |     |                | JS9 | +0,2 |                |                | H7             |                |                |                |
| <b>GSS05</b> | 30 | 50             | 140 | 124            | 8   | 33.3 | 4              | 118            | 80             | 100            | 4              | M8x15          |
|              | 35 | 50             | 140 | 124            | 10  | 38.3 | 4              |                |                |                |                |                |
| <b>GSS06</b> | 40 | 65             | 160 | 140            | 12  | 43.3 | 5              | 140            | 100            | 120            | 4              | M10x16         |
|              | 45 | 65             | 160 | 140            | 14  | 48.8 | 5              |                |                |                |                |                |
| <b>GSS07</b> | 50 | 75             | 200 | 175            | 14  | 53.8 | 5              | 165            | 115            | 140            | 5              | M12x18         |
|              | 55 | 75             | 200 | 175            | 16  | 59.3 | 5              |                |                |                |                |                |

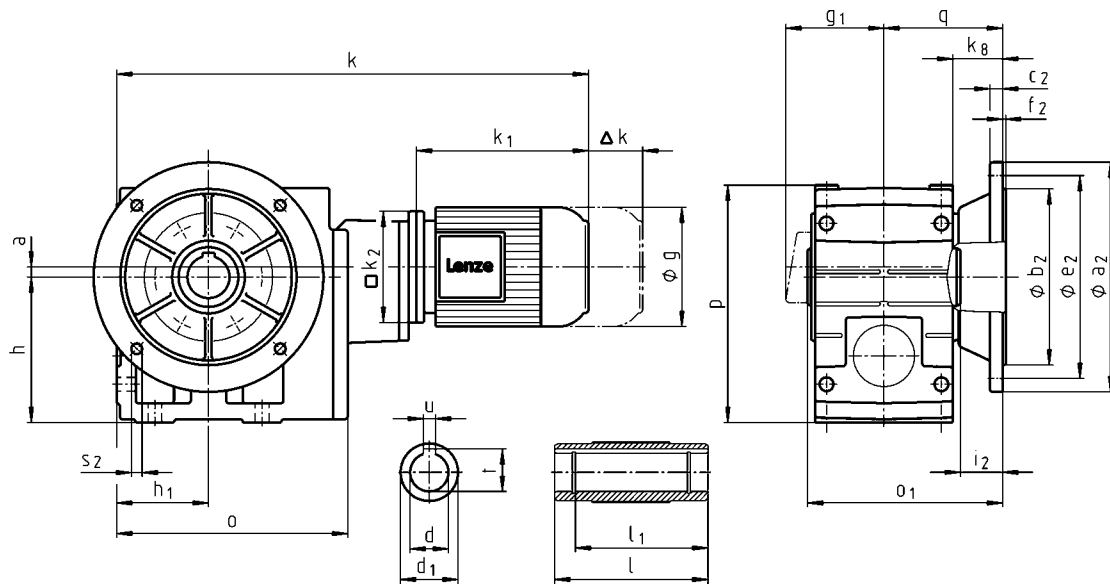
|              | a <sub>5</sub> | a <sub>6</sub> | b <sub>5</sub> | b <sub>6</sub> | b <sub>7</sub> | c <sub>5</sub> | e <sub>5</sub> | f <sub>5</sub> | f <sub>6</sub> | m  | n  | s <sub>5</sub> |
|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|----|----------------|
| <b>GSS05</b> | 47.5           | 47.5           | 95             | 140            | 105            | 17             | 127            | 124            | 169            | 21 | 29 | 11             |
| <b>GSS06</b> | 60             | 60             | 120            | 170            | 120            | 20             | 145            | 156            | 206            | 23 | 36 | 14             |
| <b>GSS07</b> | 70             | 70             | 140            | 210            | 150            | 25             | 180            | 185            | 255            | 28 | 45 | 18             |

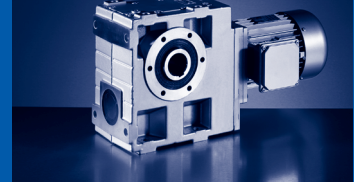


# GSS

GSS [mm] - MF□MA

## GSS□□-3M HAK

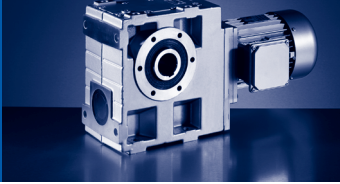




|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 | 090C32 |
|----------------------|---------|------------------|------------------|--------|--------|--------|
| <b>g</b>             |         | 123              | 139              |        | 156    | 176    |
| <b>B1</b>            | MFEMAXX | 100              | 109              |        | 141    | 146    |
|                      | MFEMABR | 107              | 118              |        | 132    | 137    |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              |        | 224.5  | 274    |
| <b>k<sub>2</sub></b> |         | 120              |                  |        | 145    | 180    |
|                      | MFEMABR | 40               | 52               |        | 73     | 68     |
| <b>Δ k</b>           | MFEMAXX |                  |                  | 128    |        |        |
|                      | MFEMABR | 170              | 165              |        | 183    | 181    |
|                      |         | <b>k</b>         |                  |        |        |        |
| <b>GSS05</b>         |         | 475              |                  |        |        |        |
| <b>GSS06</b>         |         | 532              | 552              | 575    |        |        |
| <b>GSS07</b>         |         | 586              | 606              |        | 629    | 688    |

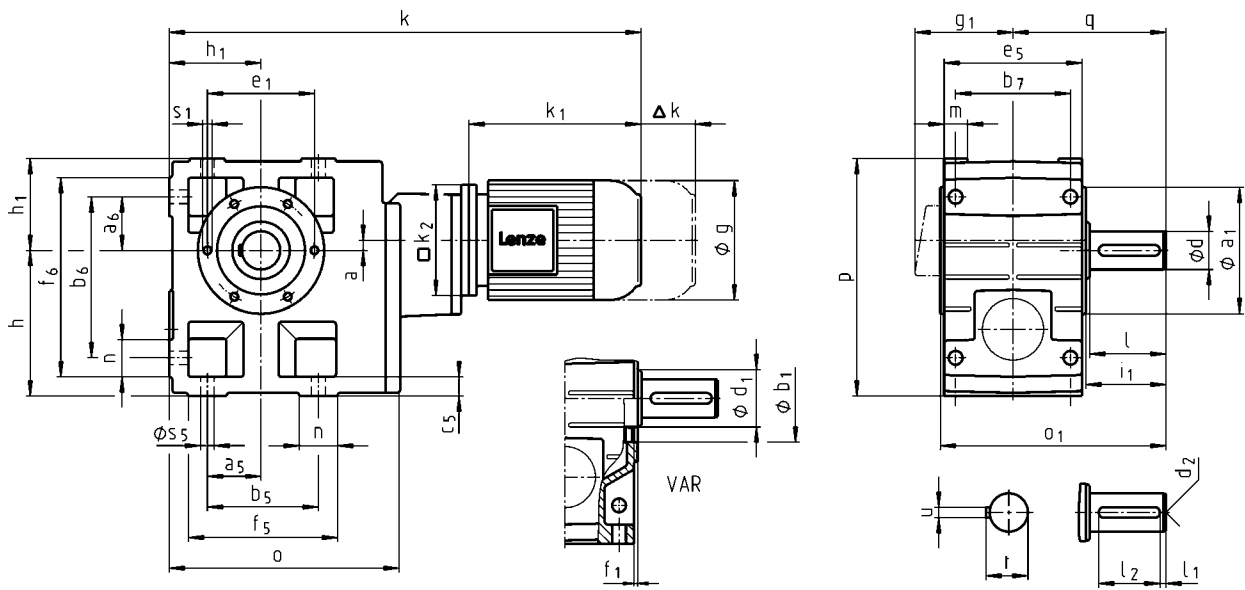
|              | a  | h   | h <sub>1</sub> | k <sub>g</sub> | o   | p   | q     |
|--------------|----|-----|----------------|----------------|-----|-----|-------|
| <b>GSS05</b> | 13 | 125 | 80             | 40             | 209 | 205 | 103.5 |
| <b>GSS06</b> | 10 | 150 | 100            | 49             | 252 | 250 | 121.5 |
| <b>GSS07</b> | 12 | 190 | 120            | 65.5           | 299 | 310 | 155.5 |

|              | d  | d <sub>1</sub> | l   | l <sub>1</sub> | u   | t    | i <sub>2</sub> | o <sub>1</sub> | a <sub>2</sub> | b <sub>2</sub> | c <sub>2</sub> | e <sub>2</sub> | f <sub>2</sub> | s <sub>2</sub> |
|--------------|----|----------------|-----|----------------|-----|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | H7 |                |     |                | JS9 | +0,2 |                |                |                | j7             |                |                |                |                |
| <b>GSS05</b> | 30 | 50             | 140 | 124            | 8   | 33.3 | 33             | 173.5          | 200            | 130            | 12             | 165            | 4              | 4 x 11         |
|              | 35 | 50             | 140 | 124            | 10  | 38.3 | 33             | 173.5          |                |                |                |                |                |                |
| <b>GSS06</b> | 40 | 65             | 160 | 140            | 12  | 43.3 | 42             | 201.5          | 250            | 180            | 15             | 215            | 4              | 4 x 14         |
|              | 45 | 65             | 160 | 140            | 14  | 48.8 | 41             | 201.5          |                |                |                |                |                |                |
| <b>GSS07</b> | 50 | 75             | 200 | 175            | 14  | 53.8 | 55             | 255.5          | 250            | 180            | 15             | 215            | 4              | 4 x 14         |
|              | 55 | 75             | 200 | 175            | 16  | 59.3 | 55             | 255.5          |                |                |                |                |                |                |

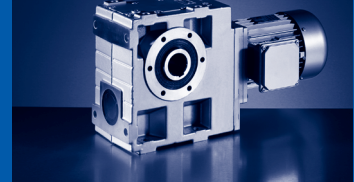


**GSS**  
GSS [mm] - MF□MA

**GSS□□-3M V□R**





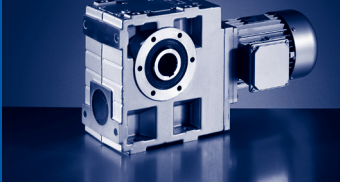


|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 | 090C32 |
|----------------------|---------|------------------|------------------|--------|--------|--------|
| <b>g</b>             |         | 123              | 139              | 156    |        | 176    |
| <b>B1</b>            | MFEMAXX | 100              | 109              | 141    |        | 146    |
|                      | MFEMABR | 107              | 118              | 132    |        | 137    |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              | 224.5  |        | 274    |
| <b>k<sub>2</sub></b> |         | 120              |                  | 145    |        | 180    |
|                      | MFEMABR | 40               | 52               | 73     |        | 68     |
| <b>Δ k</b>           | MFFMAXX |                  |                  | 128    |        |        |
|                      | MFFMABR | 170              | 165              | 183    |        | 181    |
|                      |         | <b>k</b>         |                  |        |        |        |
| <b>GSS05</b>         |         | 475              |                  |        |        |        |
| <b>GSS06</b>         |         | 532              | 552              | 575    |        |        |
| <b>GSS07</b>         |         | 586              | 606              | 629    |        | 688    |

|              | a  | h   | h <sub>1</sub> | o   | p   | q   |
|--------------|----|-----|----------------|-----|-----|-----|
| <b>GSS05</b> | 13 | 125 | 80             | 209 | 205 | 130 |
| <b>GSS06</b> | 10 | 150 | 100            | 252 | 250 | 160 |
| <b>GSS07</b> | 12 | 190 | 120            | 299 | 310 | 200 |

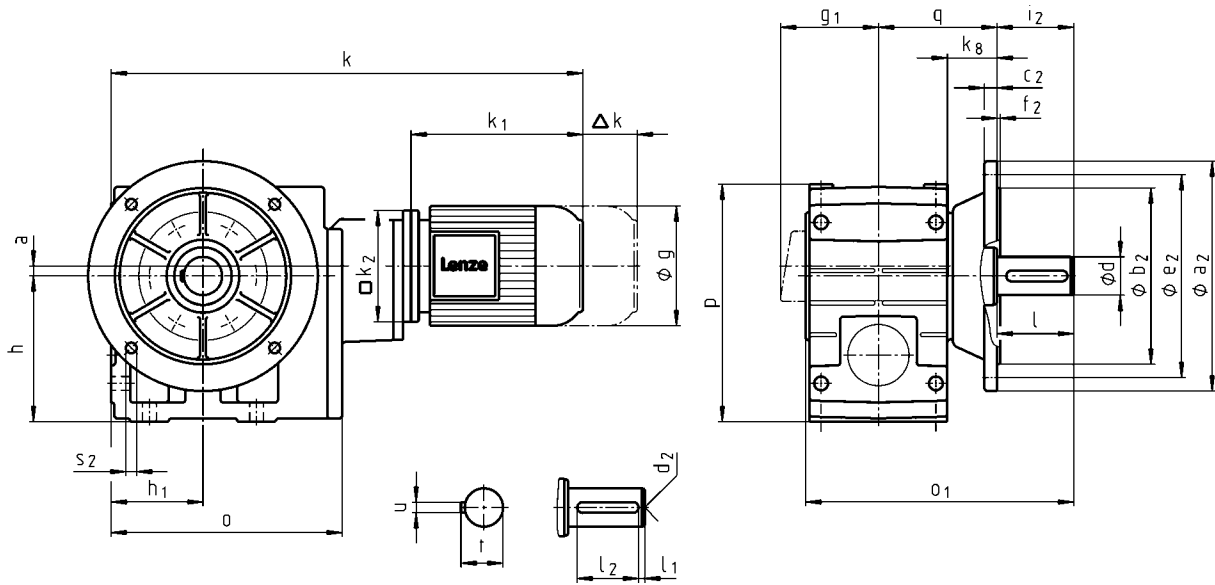
|              | d  | d <sub>1</sub> | d <sub>2</sub> | l   | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i <sub>1</sub> | o <sub>1</sub> | a <sub>1</sub> | b <sub>1</sub> | e <sub>1</sub> | f <sub>1</sub> | s <sub>1</sub> |
|--------------|----|----------------|----------------|-----|----------------|----------------|----|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|              | k6 |                |                |     |                |                |    |      |                |                |                | H7             |                |                |                |
| <b>GSS05</b> | 30 | 45             | M10            | 60  | 6              | 45             | 8  | 33   | 64             | 196.5          | 118            | 80             | 100            | 4              | M8x15          |
| <b>GSS06</b> | 40 | 65             | M16            | 80  | 7              | 63             | 12 | 43   | 85             | 235.5          | 140            | 100            | 120            | 4              | M10x16         |
| <b>GSS07</b> | 50 | 75             | M16            | 100 | 8              | 80             | 14 | 53.5 | 105            | 295.5          | 165            | 115            | 140            | 5              | M12x18         |

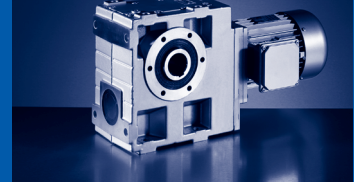
|              | a <sub>5</sub> | a <sub>6</sub> | b <sub>5</sub> | b <sub>6</sub> | b <sub>7</sub> | c <sub>5</sub> | e <sub>5</sub> | f <sub>5</sub> | f <sub>6</sub> | m  | n  | s <sub>5</sub> |
|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|----|----------------|
| <b>GSS05</b> | 47.5           | 47.5           | 95             | 140            | 105            | 17             | 127            | 124            | 169            | 21 | 29 | 11             |
| <b>GSS06</b> | 60             | 60             | 120            | 170            | 120            | 20             | 145            | 156            | 206            | 23 | 36 | 14             |
| <b>GSS07</b> | 70             | 70             | 140            | 210            | 150            | 25             | 180            | 185            | 255            | 28 | 45 | 18             |



**GSS**  
GSS [mm] - MF□MA

**GSS□□-3M VAK**

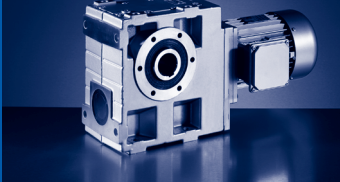




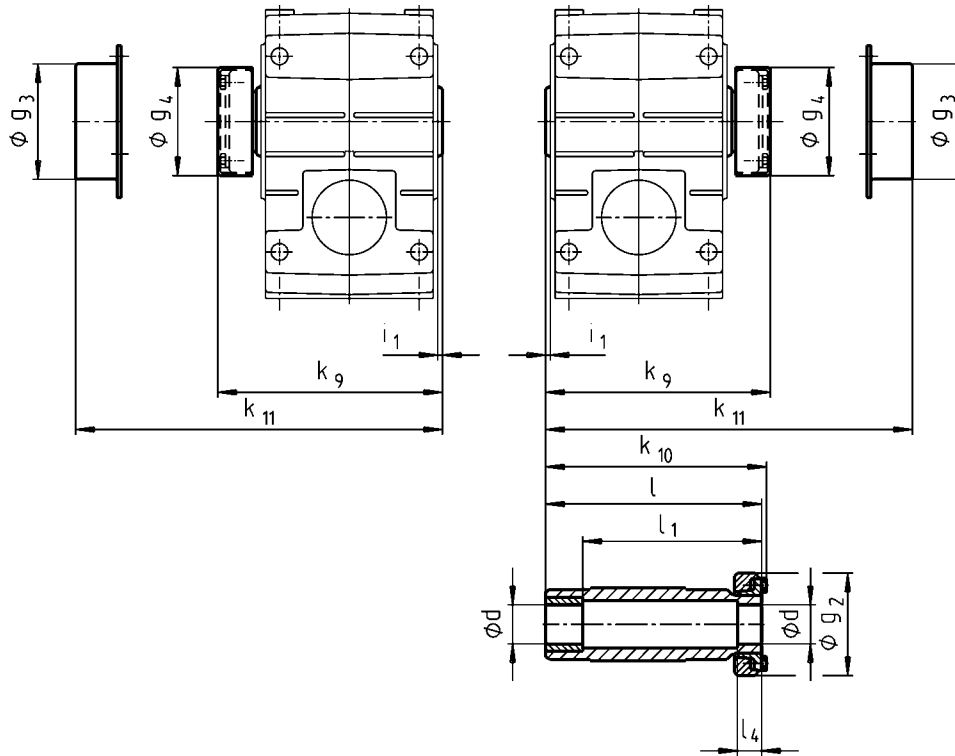
|                      |         | 063C32<br>063C42 | 071C32<br>071C42 | 080C32 | 080C42 | 090C32 |
|----------------------|---------|------------------|------------------|--------|--------|--------|
| <b>g</b>             |         | 123              | 139              | 156    |        | 176    |
| <b>B1</b>            | MFEMAXX | 100              | 109              | 141    |        | 146    |
|                      | MFEMABR | 107              | 118              | 132    |        | 137    |
| <b>k<sub>1</sub></b> | MFEMAXX | 187              | 207              | 224.5  |        | 274    |
| <b>k<sub>2</sub></b> |         | 120              |                  | 145    |        | 180    |
|                      | MFEMABR | 40               | 52               | 73     |        | 68     |
| <b>Δ k</b>           | MFEMAXX |                  |                  | 128    |        |        |
|                      | MFEMABR | 170              | 165              | 183    |        | 181    |
|                      |         | <b>k</b>         |                  |        |        |        |
| <b>GSS05</b>         |         | 475              |                  |        |        |        |
| <b>GSS06</b>         |         | 532              | 552              | 575    |        |        |
| <b>GSS07</b>         |         | 586              | 606              | 629    |        | 688    |

|              | a  | h   | h <sub>1</sub> | k <sub>8</sub> | o   | p   | q     |
|--------------|----|-----|----------------|----------------|-----|-----|-------|
| <b>GSS05</b> | 13 | 125 | 80             | 40             | 209 | 205 | 103.5 |
| <b>GSS06</b> | 10 | 150 | 100            | 49             | 252 | 250 | 121.5 |
| <b>GSS07</b> | 12 | 190 | 120            | 65.5           | 299 | 310 | 155.5 |

|              | d  | d <sub>2</sub> | l   | l <sub>1</sub> | l <sub>2</sub> | u  | t    | i <sub>2</sub> | o <sub>1</sub> | a <sub>2</sub> | b <sub>2</sub> | c <sub>2</sub> | e <sub>2</sub> | f <sub>2</sub> | s <sub>2</sub>   |
|--------------|----|----------------|-----|----------------|----------------|----|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
|              | k6 |                |     |                |                |    |      |                |                |                | j7             |                |                |                |                  |
| <b>GSS05</b> | 30 | M10            | 60  | 6              | 45             | 8  | 33   | 60             | 229.5          | 200            | 130            | 12             | 165            | 4              | 4 x 11           |
| <b>GSS06</b> | 40 | M16            | 80  | 7              | 63             | 12 | 43   | 80             | 276.5          | 250            | 180            | 15             | 215            | 4              | 4 x 14           |
| <b>GSS07</b> | 50 | M16            | 100 | 8              | 80             | 14 | 53.5 | 100            | 350.5          | 250<br>300     | 180<br>230     | 15<br>17       | 215<br>265     | 4<br>4         | 4 x 14<br>4 x 14 |

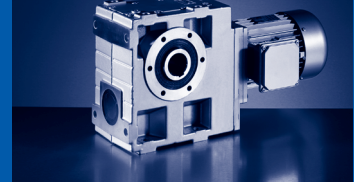


**Hollow shaft with shrink disc**

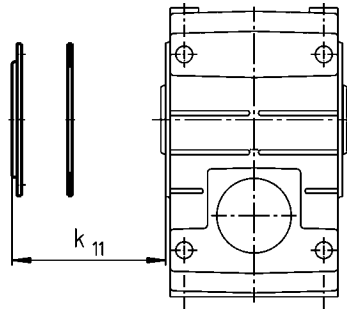


|              | d        | g <sub>2</sub> | g <sub>3</sub> | g <sub>4</sub> | i <sub>1</sub> | k <sub>9</sub> | k <sub>10</sub> | k <sub>11</sub> | l   | l <sub>1</sub> | l <sub>4</sub> |
|--------------|----------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----|----------------|----------------|
|              | h6       |                |                |                |                |                |                 |                 |     |                |                |
| <b>GSS04</b> | 25<br>30 | 72             | 79             | 76             | 2.5            | 150            | 148             | 154             | 142 | 122            | 26             |
| <b>GSS05</b> | 35       | 80             | 90             | 84             | 4.0            | 176            | 174             | 179             | 168 | 148            | 28             |
| <b>GSS06</b> | 40       | 90             | 100            | 94             | 5.0            | 202            | 200             | 204             | 194 | 164            | 30             |
| <b>GSS07</b> | 50       | 110            | 124            | 116            |                | 241            | 238             | 244             | 232 | 192            | 26             |

- ▶ Output flange and hollow shaft with shrink disc (output version SAK) are not possible in the same location. For additional dimensions see output version H□□.
- ▶ Ensure that the strength of the machine shaft material is adequate in shrink disc designs.  
When using typical steels (e.g. C45, 42CrMo4), the torques listed in the selection tables can be used without restriction. Please consult us if you wish to use material that is considerably weaker. Medium surface roughness Rz must not exceed 15 µm (machining is sufficient).



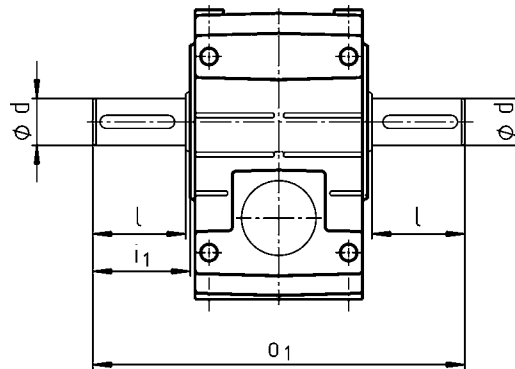
### Hoseproof hollow shaft cover



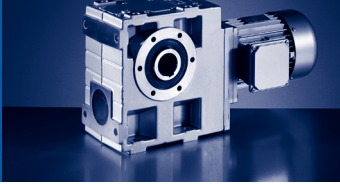
► Cover including gasket

|       | $k_{11}$<br>[mm] |
|-------|------------------|
| GSS04 | 9                |
| GSS05 | 10               |
| GSS06 | 11               |
| GSS07 | 11               |

### Gearbox with 2nd output shaft end

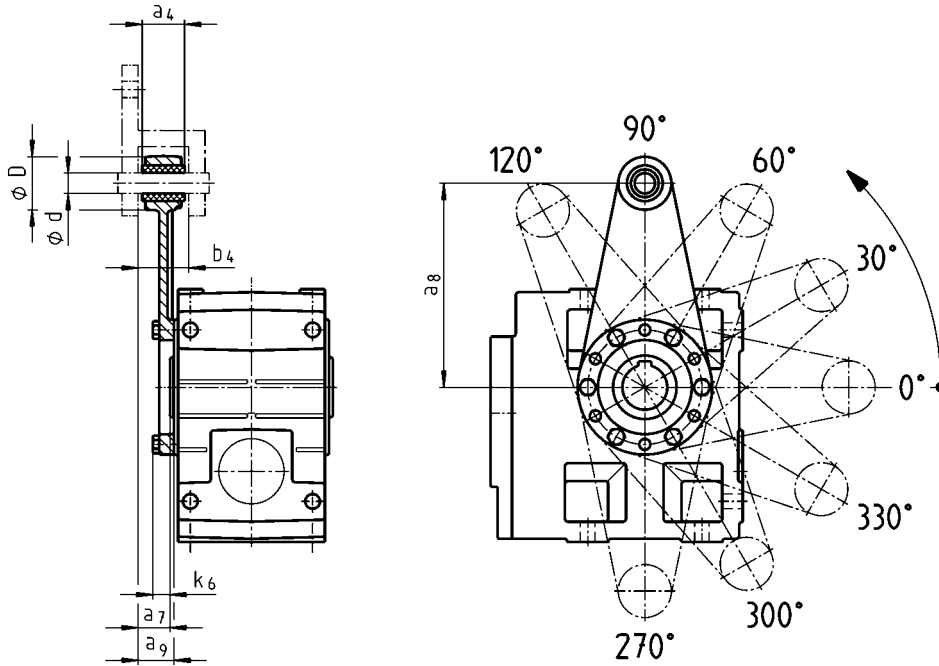


|       | d<br>[mm] | l<br>[mm] | $i_1$<br>[mm] | $o_1$<br>[mm] |
|-------|-----------|-----------|---------------|---------------|
|       | k6        |           |               |               |
| GSS04 | 25        | 50        | 52.5          | 215           |
| GSS05 | 30        | 60        | 64.0          | 260           |
| GSS06 | 40        | 80        | 85.0          | 320           |
| GSS07 | 50        | 100       | 105.0         | 400           |

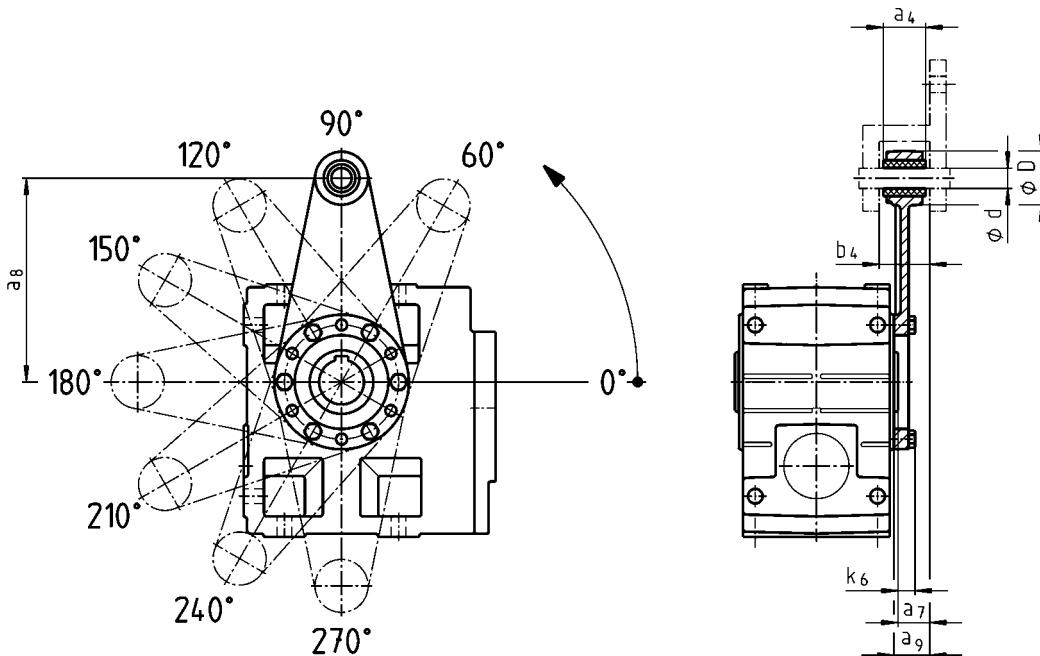


**Torque plate on threaded pitch circle**

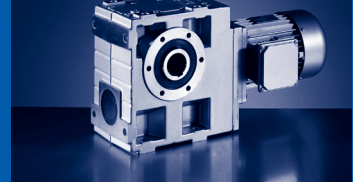
In position 3



In position 5

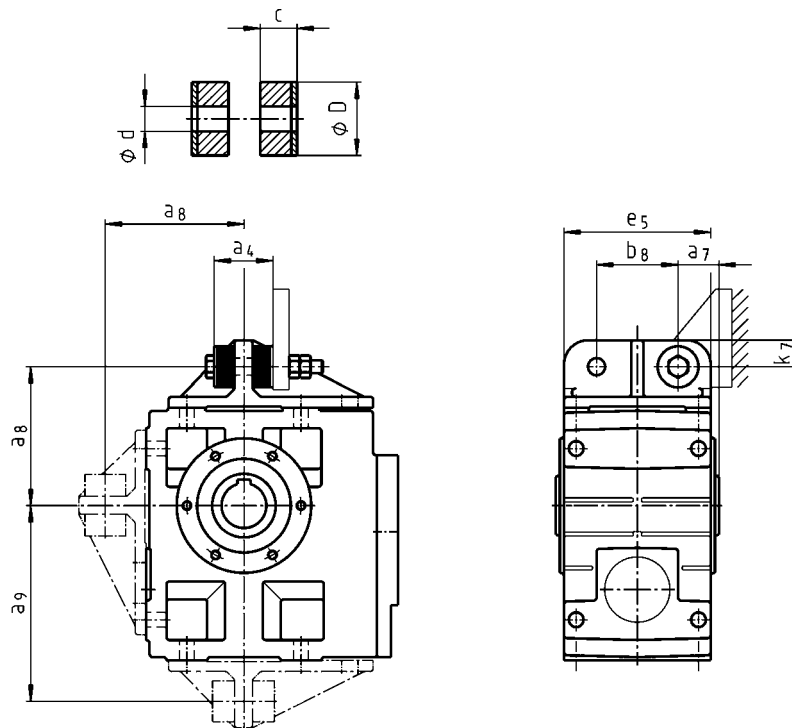


|              | a <sub>4</sub> | a <sub>7</sub> | a <sub>8</sub> | a <sub>9</sub> | b <sub>4</sub> | d  | D  | k <sub>6</sub> |
|--------------|----------------|----------------|----------------|----------------|----------------|----|----|----------------|
| <b>GSS04</b> | 30             | 24.0           | 130            | 26.5           | 34.5           | 12 | 35 | 16             |
| <b>GSS05</b> | 34             | 23.5           | 160            | 27.5           | 38.5           | 16 | 45 | 15             |
| <b>GSS06</b> | 40             | 28.0           | 200            | 33.0           | 44.5           | 20 | 50 | 18             |
| <b>GSS07</b> | 46             | 32.5           | 250            | 37.5           | 50.5           | 25 | 65 | 21             |

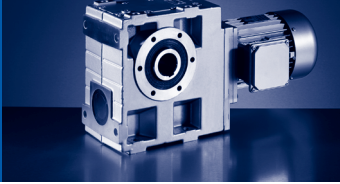


## Torque plate at housing foot

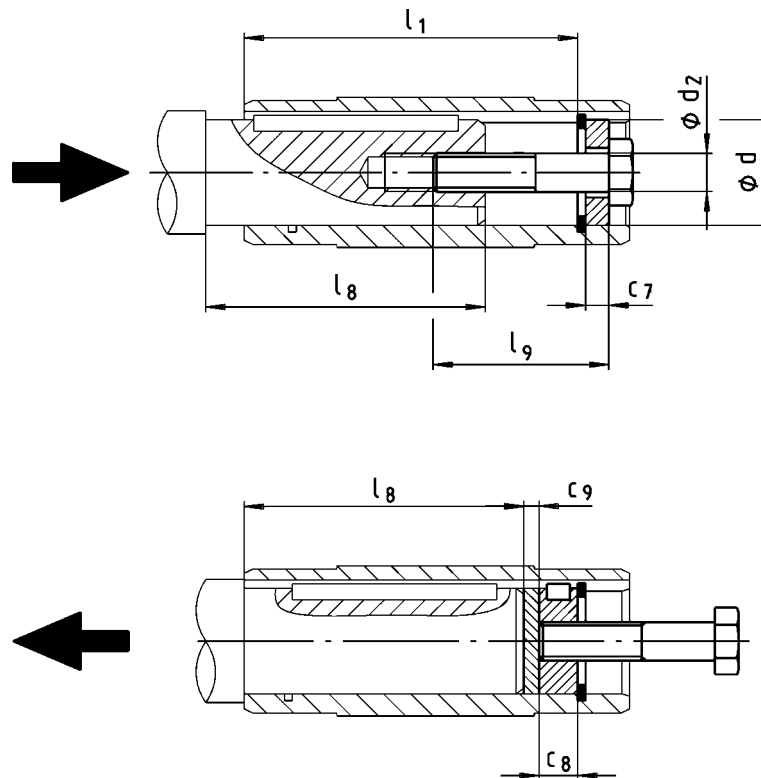
In position 2, 4 or 6



|              | $a_4$ | $a_7$ | $a_8$ | $a_9$ | $b_8$ | $c$  | $d$ | $D$ | $e_5$ | $k_7$ |
|--------------|-------|-------|-------|-------|-------|------|-----|-----|-------|-------|
| <b>GSS04</b> | 41    | 27.5  | 106   | 135.0 | 60    | 14.5 | 11  | 30  | 100   | 20    |
| <b>GSS05</b> | 45    | 35.0  | 115   | 160.0 | 70    | 15.0 | 13  | 40  | 127   | 25    |
| <b>GSS06</b> | 72    | 40.0  | 145   | 195.0 | 80    | 27.0 | 17  | 50  | 145   | 28    |
| <b>GSS07</b> | 78    | 50.0  | 170   | 240.0 | 100   | 28.0 | 21  | 60  | 180   | 35    |



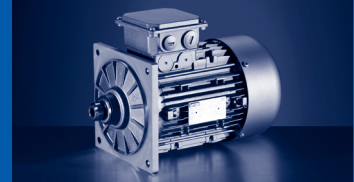
**Mounting set for hollow shaft circlip - Proposed design for auxiliary tools**



|       | d  | l <sub>1</sub> | d <sub>2</sub> | l <sub>9</sub> | c <sub>7</sub> | c <sub>8</sub> | c <sub>9</sub> | l <sub>8, max</sub> |
|-------|----|----------------|----------------|----------------|----------------|----------------|----------------|---------------------|
|       | H7 |                |                |                |                |                |                |                     |
| GSS04 | 25 | 100            | M10            | 40             | 5              | 10             | 3              | 85                  |
|       | 30 |                |                |                | 6              |                |                |                     |
| GSS05 | 30 | 124            | M12            | 50             | 7              | 12             | 4              | 107                 |
|       | 35 |                |                |                | 8              |                |                |                     |
| GSS06 | 40 | 140            | M16            | 60             | 9              | 16             | 5              | 118                 |
|       | 45 |                |                |                | 10             |                |                |                     |
| GSS07 | 50 | 175            | M20            | 80             | 11             | 20             | 5              | 148                 |
|       | 55 |                |                |                | 11             |                |                |                     |

7





## 4-pole motors

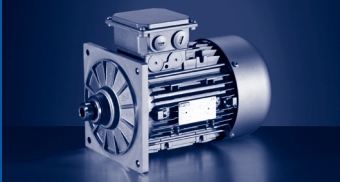
Rated frequency 120 Hz

|               | $P_N$ | $n_N$   | $U_{N,\Delta}^{1)}$ | $I_{N,\Delta}$ | $U_{N,Y}$  | $I_{N,Y}$ |
|---------------|-------|---------|---------------------|----------------|------------|-----------|
|               |       |         | $\pm 10\%$          |                | $\pm 10\%$ |           |
|               | [kW]  | [r/min] | [V]                 | [A]            | [V]        | [A]       |
| MF□□□□□063-32 | 0.55  | 3440    | 200                 | 3.20           | 345        | 1.80      |
| MF□□□□□063-42 | 0.75  | 3400    | 210                 | 4.00           | 370        | 2.30      |
| MF□□□□□071-32 | 1.10  | 3490    | 200                 | 5.50           | 345        | 3.20      |
| MF□□□□□071-42 | 1.50  | 3450    | 205                 | 6.80           | 360        | 3.90      |
| MF□□□□□080-32 | 2.20  | 3500    | 200                 | 9.10           | 345        | 5.30      |
| MF□□□□□080-42 | 3.00  | 3480    | 210                 | 11.4           | 370        | 6.60      |
| MF□□□□□090-32 | 4.00  | 3480    |                     |                | 370        | 8.50      |
| MF□□□□□100-12 | 5.50  | 3525    |                     |                | 340        | 12.9      |
| MF□□□□□100-32 | 7.50  | 3515    |                     |                | 375        | 15.9      |
| MF□□□□□112-22 | 11.0  | 3530    |                     |                | 370        | 23.5      |
| MF□□□□□132-12 | 15.0  | 3560    |                     |                | 370        | 31.2      |
| MF□□□□□132-22 | 18.5  | 3560    |                     |                | 360        | 39.0      |
| MF□□□□□132-32 | 22.0  | 3550    |                     |                | 380        | 44.5      |

|               | $M_N$ | $M_{max}$ | $\cos \varphi$ | $\eta_{75\%}$ | $\eta_{100\%}$ | $J^{1)}$             | $m^{1)}$ |
|---------------|-------|-----------|----------------|---------------|----------------|----------------------|----------|
|               | [Nm]  | [Nm]      |                | [%]           | [%]            | [kgcm <sup>2</sup> ] | [kg]     |
| MF□□□□□063-32 | 1.53  | 6.00      | 0.68           | 75.0          | 75.0           | 3.70                 | 4.40     |
| MF□□□□□063-42 | 2.11  | 8.00      | 0.69           | 79.6          | 79.6           | 3.70                 | 4.40     |
| MF□□□□□071-32 | 3.01  | 12.0      | 0.77           | 81.4          | 81.4           | 12.8                 | 6.40     |
| MF□□□□□071-42 | 4.15  | 16.0      | 0.80           | 82.8          | 82.8           | 12.8                 | 6.40     |
| MF□□□□□080-32 | 6.00  | 24.0      | 0.86           | 84.3          | 84.3           | 28.0                 | 11.0     |
| MF□□□□□080-42 | 8.20  | 32.0      | 0.86           | 85.5          | 85.5           | 28.0                 | 11.0     |
| MF□□□□□090-32 | 10.9  | 44.0      | 0.85           | 87.0          | 86.6           | 32.0                 | 18.0     |
| MF□□□□□100-12 | 14.9  | 60.0      | 0.81           | 87.9          | 87.7           | 61.0                 | 26.5     |
| MF□□□□□100-32 | 20.3  | 80.0      | 0.81           | 88.9          | 88.7           | 61.0                 | 26.5     |
| MF□□□□□112-22 | 29.7  | 120       | 0.78           | 89.8          | 89.8           | 107                  | 38.0     |
| MF□□□□□132-12 | 40.3  | 160       | 0.84           | 88.9          | 90.6           | 336                  | 66.0     |
| MF□□□□□132-22 | 49.6  | 200       | 0.84           | 89.9          | 91.2           | 336                  | 66.0     |
| MF□□□□□132-32 | 59.2  | 240       | 0.83           | 90.5          | 91.6           | 336                  | 66.0     |

<sup>1)</sup> Without accessories



## Three-phase AC motors

### Motor connection

MF three-phase AC motors are designed exclusively for inverter operation. At a base frequency of 120 Hz, the rated voltage has been set to approx. 200 V in a delta connection (up to 2.2 kW) and approx. 350 V in a star connection.

In the standard version, the motors are connected in the terminal box. As an option, the motors are also available with the plug-in connectors described on the following pages as long as the permissible ratings are not exceeded.

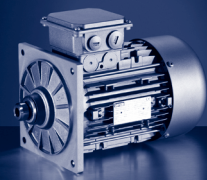
### Motor terminal box

#### Assignment: motor terminal box - built-on accessories

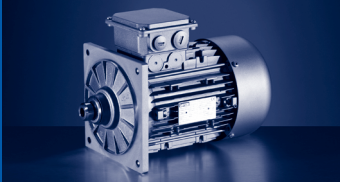
|   | M□□MA XX | M□□MA RS<br>M□□MA IG<br>M□□MA AG | M□□MA ZE |
|---|----------|----------------------------------|----------|
| MF□□□□□063-32<br>MF□□□□□063-42                  | KK1      | KK2                              |          |
| MF□□□□□071-32<br>MF□□□□□071-42                  | KK1      | KK2                              | KK2      |
| MF□□□□□080-32<br>MF□□□□□080-42                  | KK1      | KK2                              | KK2      |
| MF□□□□□090-32                                   | KK1      | KK2                              | KK2      |
| MF□□□□□100-12<br>MF□□□□□100-32                  | KK1      | KK2                              | KK2      |
| MF□□□□□112-22                                   | KK1      | KK2                              | KK2      |
| MF□□□□□132-12<br>MF□□□□□132-22<br>MF□□□□□132-32 | KK1      | KK3                              | KK3      |

# Three-phase AC motors

## Motor connection



|   | M□□MA BR | M□□MA BS<br>M□□MA BI<br>M□□MA BA | M□□MA BZ |
|---|----------|----------------------------------|----------|
| MF□□□□□063-32<br>MF□□□□□063-42                  | KK2      | KK3                              |          |
| MF□□□□□071-32<br>MF□□□□□071-42                  | KK2      | KK3                              | KK2      |
| MF□□□□□080-32<br>MF□□□□□080-42                  | KK2      | KK3                              | KK2      |
| MF□□□□□090-32                                   | KK2      | KK3                              | KK2      |
| MF□□□□□100-12<br>MF□□□□□100-32                  | KK2      | KK3                              | KK2      |
| MF□□□□□112-22                                   | KK2      | KK3                              | KK2      |
| MF□□□□□132-12<br>MF□□□□□132-22<br>MF□□□□□132-32 | KK3      | KK3                              | KK3      |



## Three-phase AC motors

### Motor connection

#### Motor terminal box with ICN connector

The connectors can be rotated through 270° and fitted with a bayonet fixing. As the connector fixing is also compatible with conventional union nuts, existing mating connectors can continue to be used without difficulty. The motor connection is determined in the terminal box and must be checked before commissioning.

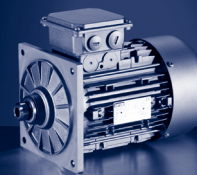
| Design                                    |           |     | ICN 6-pole | ICN 8-pole |
|---|-----------|-----|------------|------------|
| Number of power contacts                  |           |     | 3          |            |
| Number of earthing contacts               |           |     | 1          |            |
| Number of signalling contacts             |           |     | 2          |            |
| Brake/rectifier supply voltage            |           |     | 2          |            |
| TKO thermal contacts supply voltage       |           |     | 2          |            |
| Max. current                              | $I_{max}$ | [A] | 20.0       |            |
| Socket identifier for Lenze system cables |           |     | M04        | M08        |
| Counter plug                              |           |     |            |            |

#### Motor terminal box with ICN connectors - built-on accessories assignment: 4-pole / 6-pole motors

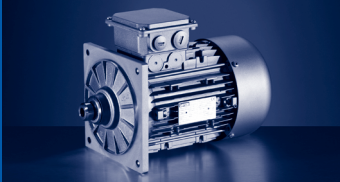
|                                | M□□MA XX | M□□MA RS<br>M□□MA IG<br>M□□MA AG | M□□MA ZE |
|--------------------------------|----------|----------------------------------|----------|
| MF□□□□□063-32<br>MF□□□□□063-42 | KK1      | KK2                              |          |
| MF□□□□□071-32<br>MF□□□□□071-42 | KK1      | KK2                              | KK2      |
| MF□□□□□080-32<br>MF□□□□□080-42 | KK1      | KK2                              | KK2      |
| MF□□□□□090-32                  | KK1      | KK2                              | KK2      |
| MF□□□□□100-12<br>MF□□□□□100-32 | KK1      | KK2                              | KK2      |

# Three-phase AC motors

## Motor connection



|                                | M□□MA BR | M□□MA BS<br>M□□MA BI<br>M□□MA BA | M□□MA BZ |
|--------------------------------|----------|----------------------------------|----------|
| MF□□□□□063-32<br>MF□□□□□063-42 | KK2      | KK2                              |          |
| MF□□□□□071-32<br>MF□□□□□071-42 | KK2      | KK2                              | KK2      |
| MF□□□□□080-32<br>MF□□□□□080-42 | KK2      | KK2                              | KK2      |
| MF□□□□□090-32                  | KK2      | KK2                              | KK2      |
| MF□□□□□100-12<br>MF□□□□□100-32 | KK2      | KK2                              | KK2      |



## Three-phase AC motors

### Motor connection

#### Motor terminal box with HAN-10 E connector

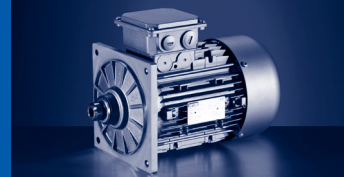
In the case of the rectangular HAN-10E plug-in connectors, all six ends of the three winding phases are taken out to the power contacts. The motor circuit is therefore determined in the mating connector.

| Design                                    |            |     | HAN-10E     |
|---|------------|-----|-------------|
| Number of power contacts                  |            |     | 6           |
| Number of earthing contacts               |            |     | 1           |
| Number of signalling contacts             |            |     | 2           |
| Brake/rectifier supply voltage            |            |     | 2           |
| TKO thermal contacts supply voltage       |            |     | 2           |
| Max. current                              | $I_{\max}$ | [A] | 16.0        |
| Socket identifier for Lenze system cables |            |     | H10 ... H13 |
| Counter plug                              |            |     |             |

#### Motor terminal box with HAN modular connector

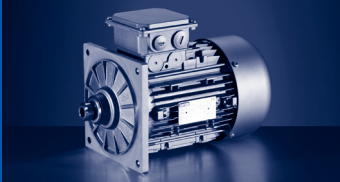
The connector is available with two different power modules (16 A or 40 A), depending on the rated motor current. The motor connection is determined in the terminal box and must be checked before commissioning.

| Design   |            |     | HAN modular  |
|--|------------|-----|--------------|
| Number of power contacts                       |            |     | 3            |
| Number of earthing contacts                    |            |     | 1            |
| Number of signalling contacts                  |            |     | 2            |
| Brake/rectifier supply voltage                 |            |     | 2            |
| Rectifier DC switching contacts supply voltage |            |     | 2            |
| TKO thermal contacts supply voltage            |            |     | 2            |
| Max. current                                   | $I_{\max}$ | [A] | 16.0<br>40.0 |
| Socket identifier for Lenze system cables      |            |     | H07 ... H09  |
| Counter plug                                   |            |     |              |



**Motor terminal box with HAN connectors - built-on accessories**  
**assignment: 4-pole / 6-pole motors**

|   | M□□MA XX<br>M□□MA BR   | M□□MA ZE<br>M□□MA BZ   |
|---|------------------------|------------------------|
| MF□□□□□063-32<br>MF□□□□□063-42                  | HAN-10E<br>HAN modular |                        |
| MF□□□□□071-32<br>MF□□□□□071-42                  | HAN-10E<br>HAN modular | HAN-10E<br>HAN modular |
| MF□□□□□080-32<br>MF□□□□□080-42                  | HAN-10E<br>HAN modular | HAN-10E<br>HAN modular |
| MF□□□□□090-32                                   | HAN-10E<br>HAN modular | HAN-10E<br>HAN modular |
| MF□□□□□100-12<br>MF□□□□□100-32                  | HAN-10E<br>HAN modular | HAN-10E<br>HAN modular |
| MF□□□□□112-22                                   |                        |                        |
| MF□□□□□132-12<br>MF□□□□□132-22<br>MF□□□□□132-32 | HAN modular            | HAN modular            |



## Three-phase AC motors

### Motor connection

#### Connector for feedback

##### ICN connector

All encoder systems (apart from IG128-24V-H) are also available with an ICN connector fixed to the motor terminal box for exceptionally fast commissioning. The connectors are fitted with a bayonet fixing, which is also compatible with conventional union nuts. Existing mating connectors can therefore continue to be used without difficulty.

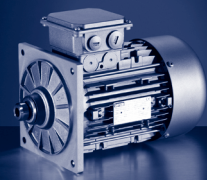
| Design  |     | Resolver | Incremental encoder<br>SinCos absolute value encoder |
|---|-----|----------|--|
| Number of signalling contacts                             |     | 12       |  |
| Coding  | [°] | 0        | 20   |
| Socket identifier for Lenze system cables<br>Counter plug |     | F05      | F06  |

##### Connector for IG128-24V-H

As a standard this incremental encoder is equipped with a connection cable of about 0.5 m length and with a common industry standard M12 connector at its end.

| Design                        |     | Incremental encoder IG128-24V-H |  |
|-------------------------------|-----|---------------------------------|--|
| Number of signalling contacts |     | 4                               |  |
| Coding                        | [°] | 0                               |  |



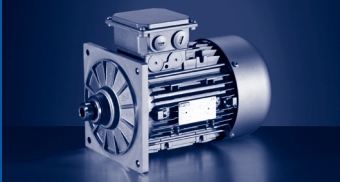


### ICN connector for blower

#### ICN connector

The blower is also optionally available with an ICN connector fixed to the terminal box of the blower for exceptionally fast commissioning. The connectors are fitted with a bayonet fixing, which is also compatible with conventional union nuts. Existing counter plugs can therefore continue to be used without difficulty.

| Design  | Blower 1-ph | Blower 3-ph |
|---|-------------|-------------|
| Number of power contacts                                  |             | 6           |
| Number of earthing contacts                               |             | 1           |
| Socket identifier for Lenze system cables<br>Counter plug | L04         | L06         |



## Three-phase AC motors

### Spring-applied brake

### Features and assignments

Three-phase AC motors can be fitted with a spring-applied brake. This is activated after the supply voltage is switched off (closed-circuit principle). For optimum adjustment of the brake motor to the application, a range of braking torques and control versions is available for every motor frame size. For applications with very high operating frequencies the brake is also available in a LongLife version, with reinforced mechanical brake components.

#### Features

##### Versions

###### ► Standard

1 x 10<sup>6</sup> Repeating switching cycles

1 x 10<sup>6</sup> Reversing switching cycles

###### ► LongLife

10 x 10<sup>6</sup> Repeating switching cycles

15 x 10<sup>6</sup> Reversing switching cycles

##### Control

► DC supply

► AC supply via rectifier in the terminal box

##### Enclosure

► Without manual release IP55

► With manual release IP54

##### Friction lining

► Asbestos-free, with low rate of wear

##### Options

► Manual release

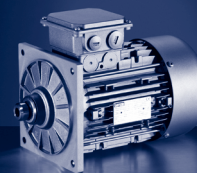
► UL/CSA approval

#### Motor - brake assignment: 4-pole motors

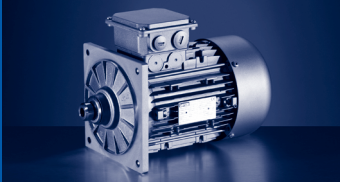
| Design        | Standard |              | LongLife |              |
|---------------|----------|--------------|----------|--------------|
|               | Size     | rated torque | Size     | rated torque |
|               | Brake    |              | Brake    |              |
|               |          | $M_k$        |          | $M_k$        |
|               |          | [Nm]         |          | [Nm]         |
| MF□□□□□063-32 | 06       | 2.50         | 06       | 4.00         |
|               | 06       | 4.00         |          |              |
| MF□□□□□071-32 | 06       | 2.50         | 06       | 4.00         |
|               | 06       | 4.00         |          |              |
|               | 08       | 3.50         |          |              |
| MF□□□□□071-42 | 06       | 2.50         | 06       | 4.00         |
|               | 06       | 4.00         |          |              |
|               | 08       | 3.50         |          |              |
|               | 08       | 8.00         |          |              |
| MF□□□□□080-32 | 08       | 3.50         | 08       | 8.00         |
|               | 08       | 8.00         |          |              |
|               | 10       | 7.00         |          |              |
| MF□□□□□080-42 | 08       | 3.50         | 08       | 8.00         |
|               | 08       | 8.00         |          |              |
|               | 10       | 7.00         |          |              |
|               | 10       | 16.0         |          |              |

# Three-phase AC motors

## Spring-applied brake



| Design        | Standard |              | LongLife       |                      |          |              |  |  |
|---------------|----------|--------------|----------------|----------------------|----------|--------------|--|--|
|               | Size     | rated torque | Size           | rated torque         |          |              |  |  |
|               | Brake    |              | Brake          |                      |          |              |  |  |
|               |          | $M_k$        |                | $M_k$                |          |              |  |  |
|               |          | [Nm]         |                | [Nm]                 |          |              |  |  |
| MF□□□□□090-32 | 08       | 3.50         | 08<br>10<br>10 | 8.00<br>7.00<br>16.0 |          |              |  |  |
|               | 08       | 8.00         |                |                      |          |              |  |  |
|               | 10       | 7.00         |                |                      |          |              |  |  |
|               | 10       | 16.0         |                |                      |          |              |  |  |
|               | 10       | 23.0         |                |                      |          |              |  |  |
| MF□□□□□100-12 | 10       | 7.00         | 10<br>12<br>12 | 16.0<br>14.0<br>32.0 |          |              |  |  |
|               | 10       | 16.0         |                |                      |          |              |  |  |
|               | 12       | 14.0         |                |                      |          |              |  |  |
|               | 12       | 32.0         |                |                      |          |              |  |  |
| MF□□□□□100-32 | 10       | 7.00         |                |                      | 12<br>12 | 14.0<br>32.0 |  |  |
|               | 10       | 16.0         |                |                      |          |              |  |  |
|               | 12       | 14.0         |                |                      |          |              |  |  |
|               | 12       | 32.0         |                |                      |          |              |  |  |
|               | 12       | 46.0         |                |                      |          |              |  |  |
| MF□□□□□112-22 | 12       | 14.0         |                |                      |          |              |  |  |
|               | 12       | 32.0         |                |                      |          |              |  |  |
|               | 14       | 35.0         |                |                      |          |              |  |  |
|               | 14       | 60.0         |                |                      |          |              |  |  |
| MF□□□□□132-12 | 14       | 35.0         |                |                      |          |              |  |  |
|               | 14       | 60.0         |                |                      |          |              |  |  |
|               | 16       | 60.0         |                |                      |          |              |  |  |
|               | 16       | 80.0         |                |                      |          |              |  |  |
| MF□□□□□132-22 | 14       | 35.0         |                |                      |          |              |  |  |
|               | 14       | 60.0         |                |                      |          |              |  |  |
|               | 16       | 60.0         |                |                      |          |              |  |  |
|               | 16       | 80.0         |                |                      |          |              |  |  |
|               | 16       | 100          |                |                      |          |              |  |  |
| MF□□□□□132-32 | 16       | 80.0         |                |                      |          |              |  |  |
|               | 16       | 100          |                |                      |          |              |  |  |



## Three-phase AC motors

### Spring-applied brake

#### Brake connection

##### Direct connection without rectifier

If the brake is activated directly without a rectifier, a freewheeling diode or a spark suppressor is required to protect against induction peaks.

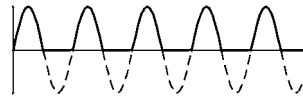
- ▶ Supply voltages
  - DC 24 V
  - DC 180 V
  - DC 205 V

##### Connection via mains voltage with brake rectifier

If the brake is not directly supplied with DC voltage, a rectifier is required. This is included in the scope of supply and is located in the terminal box of the motor. The rectifier converts the AC voltage of the connection into DC voltage. The following rectifiers are available:

##### Half-wave rectifier, 6-pole

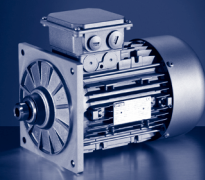
- ▶ Ratio of supply voltage to brake coil voltage = 2.22
- ▶ Approved by UL/CSA
- ▶ Supply voltages
  - AC 230 V
  - AC 277 V
  - AC 400 V
  - AC 460 V
  - AC 480 V



##### Bridge rectifier, 6-pole

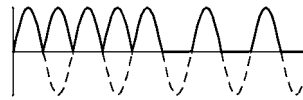
- ▶ Ratio of supply voltage to brake coil voltage = 1.11
- ▶ Supply voltage
  - AC 230 V





### Bridge/half-wave rectifier, 6-pole

- ▶ Ratio of supply voltage to brake coil voltage  
up to overexcitation time = 1.11  
beyond overexcitation time = 2.22



### Supply voltages:

- ▶ AC 230 V
- ▶ AC 277 V
- ▶ AC 400 V

During the switching operation the bridge/half-wave rectifier functions as a bridge rectifier for the overexcitation time  $t_{\bar{u}}$  and then as a half-wave rectifier. This combination optimises the performance of the brake – depending on the assignment of brake coil voltage and supply voltage:

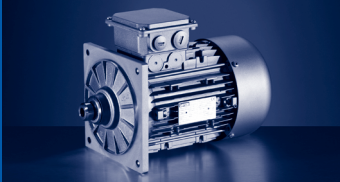
### ▶ Short-time overexcitation of the brake coil

Activating the brake coil for the overexcitation time  $t_{\bar{u}}$  with twice the rated voltage allows the disengagement time to be reduced. The brake opens more quickly and wear on the friction lining is reduced.

These features make this activation version particularly suitable for lifting applications. It is therefore only available in combination with a brake with increased braking torque.

### ▶ Holding current reduction (cold brake)

By reducing the holding current, the bridge/half-wave rectifier is able to reduce the power input to the open brake. As the brake heats up less, this type of activation is known as "cold brake".



## Three-phase AC motors

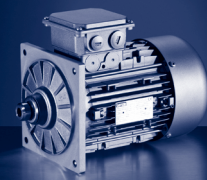
### Spring-applied brake

#### Brake data, reduced braking torque

- Please enquire for braking torques and maximum switching work values not listed here.

| Size                                  |                 |                      | 06    | 08    | 10    | 12                 | 14                 | 16                 |
|---------------------------------------|-----------------|----------------------|-------|-------|-------|--------------------|--------------------|--------------------|
| <b>Coil power</b>                     | P               | [kW]                 | 0.020 | 0.025 | 0.030 | 0.040              | 0.050              | 0.055              |
| <b>Braking torque</b>                 |                 |                      |       |       |       |                    |                    |                    |
| 100                                   | M <sub>B</sub>  | [Nm]                 | 2.50  | 3.50  | 7.00  | 14.0               | 35.0               | 60.0               |
| 1000                                  | M <sub>B</sub>  | [Nm]                 | 2.30  | 3.10  | 6.10  | 12.0               | 30.0               | 50.0               |
| 1200                                  | M <sub>B</sub>  | [Nm]                 | 2.30  | 3.10  | 6.00  | 12.0               | 29.0               | 48.0               |
| 1500                                  | M <sub>B</sub>  | [Nm]                 | 2.20  | 3.00  | 5.80  | 11.0               | 28.0               | 47.0               |
| 1800                                  | M <sub>B</sub>  | [Nm]                 | 2.10  | 2.90  | 5.70  | 11.0               | 28.0               | 46.0               |
| 3000                                  | M <sub>B</sub>  | [Nm]                 | 2.00  | 2.80  | 5.30  | 10.0               | 26.0 <sup>1)</sup> | 43.0 <sup>1)</sup> |
| 3600                                  | M <sub>B</sub>  | [Nm]                 | 2.00  | 2.70  | 5.20  | 10.0 <sup>1)</sup> |                    |                    |
| <b>Maximum switching energy</b>       |                 |                      |       |       |       |                    |                    |                    |
| 100                                   | Q <sub>E</sub>  | [KJ]                 | 3.00  | 7.50  | 12.0  | 24.0               | 30.0               | 36.0               |
| 1000                                  | Q <sub>E</sub>  | [KJ]                 | 3.00  | 7.50  | 12.0  | 24.0               | 30.0               | 36.0               |
| 1200                                  | Q <sub>E</sub>  | [KJ]                 | 3.00  | 7.50  | 12.0  | 24.0               | 30.0               | 36.0               |
| 1500                                  | Q <sub>E</sub>  | [KJ]                 | 3.00  | 7.50  | 12.0  | 24.0               | 30.0               | 36.0               |
| 1800                                  | Q <sub>E</sub>  | [KJ]                 | 3.00  | 7.50  | 12.0  | 24.0               | 30.0               | 36.0               |
| 3000                                  | Q <sub>E</sub>  | [KJ]                 | 3.00  | 7.50  | 12.0  | 24.0               | 18.0 <sup>1)</sup> | 11.0 <sup>1)</sup> |
| 3600                                  | Q <sub>E</sub>  | [KJ]                 | 3.00  | 7.50  | 12.0  | 7.00 <sup>1)</sup> |                    |                    |
| <b>Transition operating frequency</b> | S <sub>hü</sub> | [1/h]                | 79.0  | 50.0  | 40.0  | 30.0               | 28.0               | 27.0               |
| <b>Moment of inertia</b>              | J               | [kgcm <sup>2</sup> ] | 0.015 | 0.061 | 0.20  | 0.45               | 0.63               | 1.50               |
| <b>Mass</b>                           | m               | [kg]                 | 0.90  | 1.50  | 2.60  | 4.20               | 5.80               | 8.70               |

<sup>1)</sup> In the region of the load limit the value for friction energy Q<sub>BW</sub> can be reduced to 40 %.



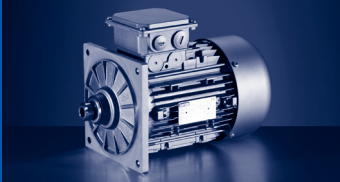
### Activation via half-wave or bridge rectifier

| Size                        |          |      | 06   | 08   | 10   | 12   | 14   | 16   |
|-----------------------------|----------|------|------|------|------|------|------|------|
| Friction energy             | $Q_{BW}$ | [MJ] | 113  | 210  | 264  | 706  | 761  | 966  |
| Delay time<br>Engaging      | $t_{11}$ | [ms] | 11.0 | 14.0 | 20.0 | 21.0 | 37.0 | 53.0 |
| Rise time<br>Braking torque | $t_{12}$ | [ms] | 13.0 | 10.0 | 17.0 | 19.0 | 22.0 | 30.0 |
| Engagement time             | $t_1$    | [ms] | 24.0 |      | 37.0 | 40.0 | 59.0 | 83.0 |
| Disengagement time          | $t_2$    | [ms] | 35.0 | 37.0 | 57.0 | 65.0 | 148  | 169  |

### Activation via bridge/half-wave rectifier

| Design                      |                |      | Holding current reduction (cold brake) |      |      |      |      |      |
|-----------------------------|----------------|------|--|------|------|------|------|------|
| Size                        |                |      | 06                                     | 08   | 10   | 12   | 14   | 16   |
| Friction energy             | $Q_{BW}$       | [MJ] | 113                                    | 210  | 264  | 706  | 761  | 966  |
| Overexcitation time         | $t_{\ddot{u}}$ | [ms] | 300                                    |      |      | 1300 |      |      |
| Min. rest time              | $t$            | [ms] | 900                                    |      |      | 3900 |      |      |
| Delay time<br>Engaging      | $t_{11}$       | [ms] | 12.0                                   | 22.0 | 35.0 | 49.0 | 61.0 | 114  |
| Rise time<br>Braking torque | $t_{12}$       | [ms] | 14.0                                   | 16.0 | 30.0 | 45.0 | 37.0 | 65.0 |
| Engagement time             | $t_1$          | [ms] | 26.0                                   | 38.0 | 66.0 | 93.0 | 97.0 | 180  |
| Disengagement time          | $t_2$          | [ms] | 35.0                                   | 37.0 | 57.0 | 65.0 | 148  | 169  |

- ▶ The brake response and application times are guide values.  
The engagement time is 10 times longer with AC-side switching.  
With the maximum air gap the disengagement time  $t_2$  – depending on the brake and control – is up to 4 times longer than the disengagement time with the rated air gap.



## Three-phase AC motors Spring-applied brake

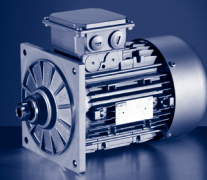
### Brake data, standard braking torque

- Please enquire for braking torques and maximum switching work values not listed here.

| Size                                  |                 |                      | 06    | 08    | 10    | 12                 | 14                 | 16                 |
|---------------------------------------|-----------------|----------------------|-------|-------|-------|--------------------|--------------------|--------------------|
| <b>Coil power</b>                     | P               | [kW]                 | 0.020 | 0.025 | 0.030 | 0.040              | 0.050              | 0.055              |
| <b>Braking torque</b>                 |                 |                      |       |       |       |                    |                    |                    |
| 100                                   | M <sub>B</sub>  | [Nm]                 | 4.00  | 8.00  | 16.0  | 32.0               | 60.0               | 80.0               |
| 1000                                  | M <sub>B</sub>  | [Nm]                 | 3.70  | 7.20  | 14.0  | 27.0               | 51.0               | 66.0               |
| 1200                                  | M <sub>B</sub>  | [Nm]                 | 3.60  | 7.00  | 14.0  | 27.0               | 50.0               | 65.0               |
| 1500                                  | M <sub>B</sub>  | [Nm]                 | 3.50  | 6.80  | 13.0  | 26.0               | 48.0               | 63.0               |
| 1800                                  | M <sub>B</sub>  | [Nm]                 | 3.40  | 6.70  | 13.0  | 26.0               | 47.0               | 61.0               |
| 3000                                  | M <sub>B</sub>  | [Nm]                 | 3.20  | 6.30  | 12.0  | 24.0               | 44.0 <sup>1)</sup> | 57.0 <sup>1)</sup> |
| 3600                                  | M <sub>B</sub>  | [Nm]                 | 3.20  | 6.10  | 12.0  | 23.0 <sup>1)</sup> |                    |                    |
| <b>Maximum switching energy</b>       |                 |                      |       |       |       |                    |                    |                    |
| 100                                   | Q <sub>E</sub>  | [KJ]                 | 3.00  | 7.50  | 12.0  | 24.0               | 30.0               | 36.0               |
| 1000                                  | Q <sub>E</sub>  | [KJ]                 | 3.00  | 7.50  | 12.0  | 24.0               | 30.0               | 36.0               |
| 1200                                  | Q <sub>E</sub>  | [KJ]                 | 3.00  | 7.50  | 12.0  | 24.0               | 30.0               | 36.0               |
| 1500                                  | Q <sub>E</sub>  | [KJ]                 | 3.00  | 7.50  | 12.0  | 24.0               | 30.0               | 36.0               |
| 1800                                  | Q <sub>E</sub>  | [KJ]                 | 3.00  | 7.50  | 12.0  | 24.0               | 30.0               | 36.0               |
| 3000                                  | Q <sub>E</sub>  | [KJ]                 | 3.00  | 7.50  | 12.0  | 24.0               | 18.0 <sup>1)</sup> | 11.0 <sup>1)</sup> |
| 3600                                  | Q <sub>E</sub>  | [KJ]                 | 3.00  | 7.50  | 12.0  | 7.00 <sup>1)</sup> |                    |                    |
| <b>Transition operating frequency</b> | S <sub>hü</sub> | [1/h]                | 79.0  | 50.0  | 40.0  | 30.0               | 28.0               | 27.0               |
| <b>Moment of inertia</b>              | J               | [kgcm <sup>2</sup> ] | 0.015 | 0.061 | 0.20  | 0.45               | 0.63               | 1.50               |
| <b>Mass</b>                           | m               | [kg]                 | 0.90  | 1.50  | 2.60  | 4.20               | 5.80               | 8.70               |

<sup>1)</sup> In the region of the load limit the value for friction energy Q<sub>BW</sub> can be reduced to 40 %.





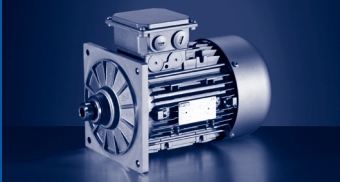
### Activation via half-wave or bridge rectifier

| Size                        |          |      | 06   | 08   | 10   | 12   | 14   | 16   |
|-----------------------------|----------|------|------|------|------|------|------|------|
| Friction energy             | $Q_{BW}$ | [MJ] | 85.0 | 158  | 264  | 530  | 571  | 966  |
| Delay time<br>Engaging      | $t_{11}$ | [ms] | 15.0 |      | 28.0 |      | 17.0 | 27.0 |
| Rise time<br>Braking torque | $t_{12}$ | [ms] | 13.0 | 16.0 | 19.0 | 25.0 |      | 30.0 |
| Engagement time             | $t_1$    | [ms] | 28.0 | 31.0 | 47.0 | 53.0 | 42.0 | 57.0 |
| Disengagement time          | $t_2$    | [ms] | 45.0 | 57.0 | 76.0 | 115  | 210  | 220  |

### Activation via bridge/half-wave rectifier

| Design                      |                |      | Holding current reduction (cold brake) |      |      |      |      |      |  |
|-----------------------------|----------------|------|--|------|------|------|------|------|--|
| Size                        |                |      | 06                                     | 08   | 10   | 12   | 14   | 16   |  |
| Friction energy             | $Q_{BW}$       | [MJ] | 85.0                                   | 158  | 264  | 530  | 571  | 966  |  |
| Overexcitation time         | $t_{\ddot{u}}$ | [ms] | 300                                    |      |      |      | 1300 |      |  |
| Min. rest time              | $t$            | [ms] | 900                                    |      |      |      | 3900 |      |  |
| Delay time<br>Engaging      | $t_{11}$       | [ms] | 16.0                                   | 25.0 | 31.0 | 48.0 | 33.0 | 58.0 |  |
| Rise time<br>Braking torque | $t_{12}$       | [ms] | 14.0                                   | 27.0 | 21.0 | 43.0 | 49.0 | 64.0 |  |
| Engagement time             | $t_1$          | [ms] | 30.0                                   | 52.0 |      | 90.0 | 82.0 | 122  |  |
| Disengagement time          | $t_2$          | [ms] | 45.0                                   | 57.0 | 76.0 | 115  | 210  | 220  |  |

- ▶ The brake response and application times are guide values.  
The engagement time is 10 times longer with AC-side switching.  
With the maximum air gap the disengagement time  $t_2$  – depending on the brake and control – is up to 4 times longer than the disengagement time with the rated air gap.



## Three-phase AC motors Spring-applied brake

### Brake data, increased braking torque

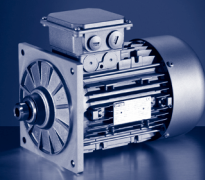
- Please enquire for braking torques and maximum switching work values not listed here.

| Size                                  |                 |                      | 10    | 12                 | 14                 | 16                 | 16                 |
|---------------------------------------|-----------------|----------------------|-------|--------------------|--------------------|--------------------|--------------------|
| <b>Coil power</b>                     | P               | [kW]                 | 0.030 | 0.040              | 0.050              | 0.055              | 0.055              |
| <b>Braking torque</b>                 |                 |                      |       |                    |                    |                    |                    |
| 100                                   | M <sub>B</sub>  | [Nm]                 | 23.0  | 46.0               | 75.0               | 100                | 125                |
| 1000                                  | M <sub>B</sub>  | [Nm]                 | 20.0  | 39.0               | 64.0               | 83.0               | 103                |
| 1200                                  | M <sub>B</sub>  | [Nm]                 | 20.0  | 39.0               | 62.0               | 81.0               | 101                |
| 1500                                  | M <sub>B</sub>  | [Nm]                 | 19.0  | 38.0               | 60.0               | 78.0               | 98.0               |
| 1800                                  | M <sub>B</sub>  | [Nm]                 | 19.0  | 37.0               | 59.0               | 77.0               | 96.0               |
| 3000                                  | M <sub>B</sub>  | [Nm]                 | 17.0  | 34.0               | 55.0 <sup>1)</sup> | 71.0 <sup>1)</sup> | 89.0 <sup>1)</sup> |
| 3600                                  | M <sub>B</sub>  | [Nm]                 | 17.0  | 33.0 <sup>1)</sup> |                    |                    |                    |
| <b>Maximum switching energy</b>       |                 |                      |       |                    |                    |                    |                    |
| 100                                   | Q <sub>E</sub>  | [KJ]                 | 12.0  | 24.0               | 30.0               | 36.0               | 36.0               |
| 1000                                  | Q <sub>E</sub>  | [KJ]                 | 12.0  | 24.0               | 30.0               | 36.0               | 36.0               |
| 1200                                  | Q <sub>E</sub>  | [KJ]                 | 12.0  | 24.0               | 30.0               | 36.0               | 36.0               |
| 1500                                  | Q <sub>E</sub>  | [KJ]                 | 12.0  | 24.0               | 30.0               | 36.0               | 36.0               |
| 1800                                  | Q <sub>E</sub>  | [KJ]                 | 12.0  | 24.0               | 30.0               | 36.0               | 36.0               |
| 3000                                  | Q <sub>E</sub>  | [KJ]                 | 12.0  | 24.0               | 18.0 <sup>1)</sup> | 11.0 <sup>1)</sup> | 11.0 <sup>1)</sup> |
| 3600                                  | Q <sub>E</sub>  | [KJ]                 | 12.0  | 7.00 <sup>1)</sup> |                    |                    |                    |
| <b>Transition operating frequency</b> | S <sub>hü</sub> | [1/h]                | 40.0  | 30.0               | 28.0               | 27.0               | 27.0               |
| <b>Moment of inertia</b>              | J               | [kgcm <sup>2</sup> ] | 0.20  | 0.45               | 0.63               | 1.50               | 1.50               |
| <b>Mass</b>                           | m               | [kg]                 | 2.60  | 4.20               | 5.80               | 8.70               | 8.70               |

<sup>1)</sup> In the region of the load limit the value for friction energy Q<sub>BW</sub> can be reduced to 40 %.

### Activation via half-wave or bridge rectifier

| Size                      |                 |      | 10   | 12   | 14   | 16   | 16   |
|---------------------------|-----------------|------|------|------|------|------|------|
| <b>Friction energy</b>    | Q <sub>BW</sub> | [MJ] | 198  | 353  | 253  | 563  | 241  |
| <b>Delay time</b>         |                 |      |      |      |      |      |      |
| Engaging                  | t <sub>11</sub> | [ms] | 10.0 | 16.0 | 11.0 | 22.0 | 17.0 |
| <b>Rise time</b>          |                 |      |      |      |      |      |      |
| Braking torque            | t <sub>12</sub> | [ms] | 19.0 | 25.0 |      | 30.0 |      |
| <b>Engagement time</b>    | t <sub>1</sub>  | [ms] | 29.0 | 41.0 | 36.0 | 52.0 | 47.0 |
| <b>Disengagement time</b> | t <sub>2</sub>  | [ms] | 109  | 193  | 308  | 297  | 435  |



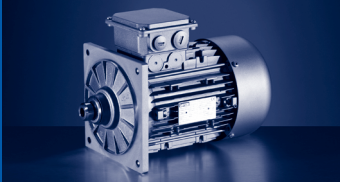
### Activation via bridge/half-wave rectifier

| Design                      |                |      | Holding current reduction (cold brake) |      |      |      |      |
|-----------------------------|----------------|------|--|------|------|------|------|
| Size                        |                |      | 10                                     | 12   | 14   | 16   |      |
| Friction energy             | $Q_{BW}$       | [MJ] | 198                                    | 353  | 253  | 563  | 241  |
| Overexcitation time         | $t_{\ddot{u}}$ | [ms] | 300                                    |      | 1300 |      |      |
| Min. rest time              | $t$            | [ms] | 900                                    |      | 3900 |      |      |
| Delay time<br>Engaging      | $t_{11}$       | [ms] | 24.0                                   | 27.0 | 17.0 | 41.0 | 21.0 |
| Rise time<br>Braking torque | $t_{12}$       | [ms] | 44.0                                   | 43.0 | 37.0 | 55.0 | 37.0 |
| Engagement time             | $t_1$          | [ms] | 68.0                                   | 70.0 | 54.0 | 97.0 | 57.0 |
| Disengagement time          | $t_2$          | [ms] | 109                                    | 193  | 308  | 297  | 435  |

| Design                      |                |      | Over-excitation |      |      |      |      |
|-----------------------------|----------------|------|-----------------|------|------|------|------|
| Size                        |                |      | 10              | 12   | 14   | 16   |      |
| Friction energy             | $Q_{BW}$       | [MJ] | 264             | 706  | 761  | 966  |      |
| Overexcitation time         | $t_{\ddot{u}}$ | [ms] | 300             |      | 1300 |      |      |
| Min. rest time              | $t$            | [ms] | 900             |      | 3900 |      |      |
| Delay time<br>Engaging      | $t_{11}$       | [ms] | 29.0            | 54.0 | 31.0 | 70.0 | 46.0 |
| Rise time<br>Braking torque | $t_{12}$       | [ms] | 53.0            | 87.0 | 68.0 | 93.0 | 83.0 |
| Engagement time             | $t_1$          | [ms] | 82.0            | 141  | 99.0 | 163  | 129  |
| Disengagement time          | $t_2$          | [ms] | 53.0            | 81.0 | 117  | 141  | 168  |

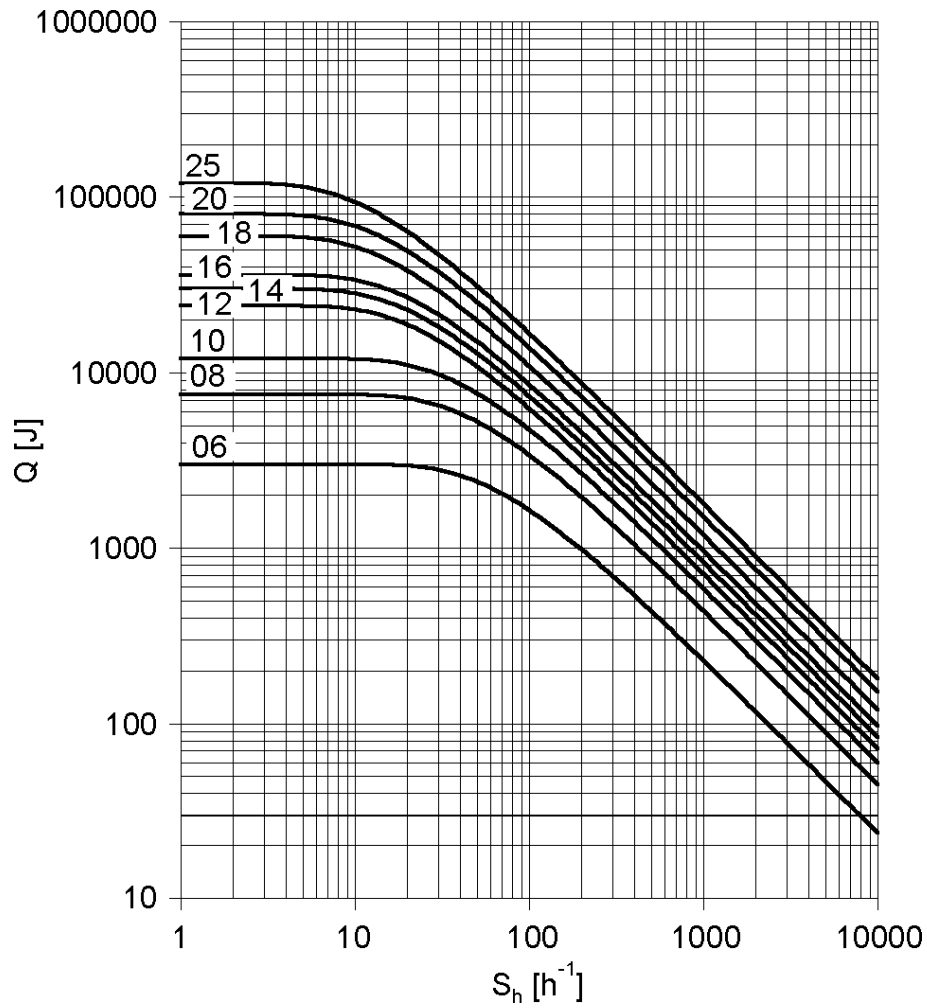
- ▶ The brake response and application times are guide values. The engagement time is 10 times longer with AC-side switching. With the maximum air gap the disengagement time  $t_2$  – depending on the brake and control – is up to 4 times longer than the disengagement time with the rated air gap.



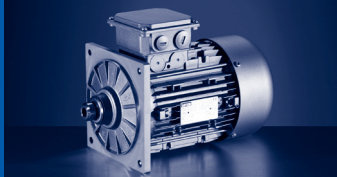
# Three-phase AC motors

## Spring-applied brake

### Permissible friction energy



$Q$  = Switching energy per switching cycle  
 $S_h$  = Operating frequency  
 Brake size = 06 ... 25

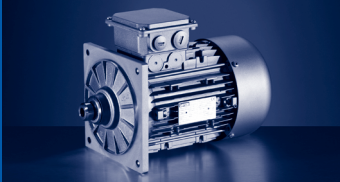


### Rated data

The use of a blower enables operation below 20 Hz without torque derating.

### Blower data 50 Hz

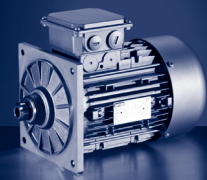
|     | Number of phases | Connection method | $U_{\min}$ | $U_{\max}$ | $P_{\max}$ | $I_{\max}$ | $m$  |
|-----|------------------|-------------------|------------|------------|------------|------------|------|
|     |                  |                   | [V]        | [V]        | [kW]       | [A]        | [kg] |
| 063 | 1                |                   | 230        | 277        | 0.027      | 0.11       | 2.00 |
|     | 3                | Δ                 | 200        | 303        | 0.028      | 0.12       |      |
|     |                  | Y                 | 346        | 525        |            | 0.070      |      |
| 071 | 1                |                   | 230        | 277        | 0.027      | 0.10       | 2.10 |
|     | 3                | Δ                 | 200        | 303        | 0.031      | 0.11       |      |
|     |                  | Y                 | 346        | 525        |            | 0.060      |      |
| 080 | 1                |                   | 230        | 277        | 0.029      | 0.11       | 2.30 |
|     | 3                | Δ                 | 200        | 303        | 0.031      | 0.11       |      |
|     |                  | Y                 | 346        | 525        |            | 0.060      |      |
| 090 | 1                |                   | 220        | 277        | 0.065      | 0.29       | 2.70 |
|     | 3                | Δ                 | 200        | 303        | 0.091      | 0.38       |      |
|     |                  | Y                 | 346        | 525        |            | 0.22       |      |
| 100 | 1                |                   | 220        | 277        | 0.066      | 0.28       | 3.00 |
|     | 3                | Δ                 | 200        | 303        | 0.091      | 0.37       |      |
|     |                  | Y                 | 346        | 525        |            | 0.22       |      |
| 112 | 1                |                   | 220        | 277        | 0.071      | 0.28       | 3.10 |
|     | 3                | Δ                 | 200        | 303        | 0.097      | 0.35       |      |
|     |                  | Y                 | 346        | 525        |            | 0.20       |      |
| 132 | 1                |                   | 230        | 277        | 0.098      | 0.40       | 4.20 |
|     | 3                | Δ                 | 200        | 303        | 0.12       | 0.58       |      |
|     |                  | Y                 | 346        | 525        |            | 0.33       |      |



## Three-phase AC motors Blower

### Blower data 60 Hz

|            | Number of phases | Connection method | $U_{\min}$ | $U_{\max}$ | $P_{\max}$ | $I_{\max}$ | <b>m</b><br>[kg] |
|------------|------------------|-------------------|------------|------------|------------|------------|------------------|
|            |                  |                   | [V]        | [V]        | [kW]       | [A]        |                  |
| <b>063</b> | 1                |                   | 230        | 277        | 0.032      | 0.12       | 2.00             |
|            | 3                | Δ                 | 220        | 332        | 0.028      | 0.10       |                  |
| Y          |                  | 380               | 575        | 0.060      |            |            |                  |
| <b>071</b> | 1                |                   | 230        | 277        | 0.033      | 0.12       | 2.10             |
|            | 3                | Δ                 | 220        | 332        | 0.029      | 0.10       |                  |
| Y          |                  | 380               | 575        | 0.060      |            |            |                  |
| <b>080</b> | 1                |                   | 230        | 277        | 0.037      | 0.14       | 2.30             |
|            | 3                | Δ                 | 220        | 332        | 0.034      | 0.10       |                  |
| Y          |                  | 380               | 575        | 0.060      |            |            |                  |
| <b>090</b> | 1                |                   | 220        | 277        | 0.065      | 0.25       | 2.70             |
|            | 3                | Δ                 |            | 332        | 0.077      | 0.33       |                  |
| Y          |                  | 380               | 575        | 0.19       |            |            |                  |
| <b>100</b> | 1                |                   | 220        | 277        | 0.075      | 0.30       | 3.00             |
|            | 3                | Δ                 |            | 332        | 0.087      | 0.31       |                  |
| Y          |                  | 380               | 575        | 0.18       |            |            |                  |
| <b>112</b> | 1                |                   | 220        | 277        | 0.094      | 0.37       | 3.10             |
|            | 3                | Δ                 |            | 332        | 0.10       | 0.31       |                  |
| Y          |                  | 380               | 575        | 0.18       |            |            |                  |
| <b>132</b> | 1                |                   | 230        | 277        | 0.15       | 0.57       | 4.20             |
|            | 3                | Δ                 | 220        | 332        |            | 0.44       |                  |
| Y          |                  | 380               | 575        | 0.25       |            |            |                  |



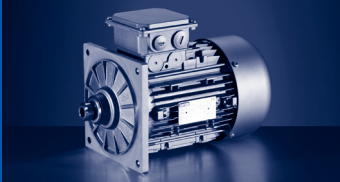
Tailored to meet the requirements of the various applications and necessary accuracies, the following feedback systems are available.

- ▶ The three-phase AC motors with resolver, incremental encoder or SinCos absolute value encoders cannot be used for speed-dependent safety functions in conjunction with the SM 301 safety module.

## Resolver

Stator-fed resolver with two stator windings offset by 90° and one rotor winding with transformer winding.

|  |              |       |       |              |
|--|--------------|-------|-------|--------------|
| <b>Product key</b>                               |              |       |       | <b>RS1</b>   |
| <b>Accuracy</b>                                  |              |       | [°]   | -10 ... 10   |
| <b>Absolute positioning</b>                      |              |       |       | 1 revolution |
| <b>Max. input voltage</b><br>DC                  | $U_{in,max}$ |       | [V]   | 10.0         |
| <b>Max. input frequency</b>                      | $f_{in,max}$ |       | [kHz] | 4.00         |
| <b>Ratio</b><br>Stator / rotor                   |              | ± 5 % |       | 0.30         |
| <b>Rotor impedance</b>                           | $Z_{ro}$     |       | [Ω]   | 51 + j90     |
| <b>Stator impedance</b>                          | $Z_{so}$     |       | [Ω]   | 102 + j150   |
| <b>Impedance</b>                                 | $Z_{rs}$     |       | [Ω]   | 44 + j76     |
| <b>Min. insulation resistance</b><br>At DC 500 V | R            |       | [MΩ]  | 10.0         |
| <b>Number of pole pairs</b>                      |              |       |       | 1            |



## Three-phase AC motors

### Feedback

### Incremental encoder and SinCos absolute value encoder

| Encoder type             |              |       | HTL incremental    |             |              |              | TTL incremental                 |             |              | SinCos absolute value |
|--------------------------|--------------|-------|--------------------|-------------|--------------|--------------|---------------------------------|-------------|--------------|-----------------------|
|                          |              |       | IG128-24V-H        | IG512-24V-H | IG1024-24V-H | IG2048-24V-H | IG512-5V-T                      | IG1024-5V-T | IG2048-5V-T  | AM1024-8V-H           |
| Encoder type             |              |       |                    |             |              |              |                                 |             |              | Multi-turn            |
| Pulses                   |              |       | 128                | 512         | 1024         | 2048         | 512                             | 1024        | 2048         | 1024                  |
| Output signals           |              |       | HTL                |             |              |              | TTL                             |             |              | 1 V <sub>SS</sub>     |
| Interfaces               |              |       |                    |             |              |              |                                 |             |              | Hiperface             |
| Absolute revolutions     |              |       | 0                  |             |              |              |                                 |             |              | 4096                  |
| Accuracy                 |              | [°]   | -22.5 ... 22.5     |             | -2 ... 2     |              |                                 |             | -0.8 ... 0.8 |                       |
| Min. input voltage DC    | $U_{in,min}$ | [V]   | 8.00               |             |              |              | 4.75                            |             |              | 7.00                  |
| Max. input voltage DC    | $U_{in,max}$ | [V]   | 26.0               | 30.0        |              |              | 5.25                            |             |              | 12.0                  |
| Max. current consumption | $I_{max}$    | [A]   | 0.040              | 0.15        |              |              |                                 | 0.080       |              |                       |
| Limit frequency          | $f_{max}$    | [kHz] | 30.0               | 160         |              |              | 300                             |             |              | 200                   |
| Inverter assignment      |              |       | E84AVSC<br>E84AVHC | E84AVHC     |              |              | E84AVTC<br>E94A<br>ECS<br>EVS93 |             |              |                       |

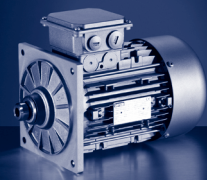
#### Frequency inverter

- ▶ Inverter Drives 8400 StateLine (E84AVSC)
- ▶ Inverter Drives 8400 HighLine (E84AVHC)
- ▶ Inverter Drives 8400 TopLine (E84AVTC)

#### Servo inverter

- ▶ Servo Drives 9400 (E94A)
- ▶ 9300 servo inverter (EVS93)
- ▶ ECS servo system (ECS)





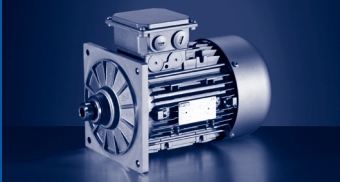
The thermal sensors are integrated in the windings. The use of an additional motor protection switch is recommended.

### TKO thermal contacts

| Function   | Operating temperature | Min. reset temperature | Max. reset temperature | Max. input current | Max. input voltage |
|------------|-----------------------|------------------------|------------------------|--------------------|--------------------|
|            |                       |                        |                        |                    | AC                 |
|            | T                     | $T_{min}$              | $T_{max}$              | $I_{in,max}$       | $U_{in,max}$       |
|            | -5 ... 5              |                        |                        |                    |                    |
|            | [°C]                  | [°C]                   | [°C]                   | [A]                | [V]                |
| NC contact | 150                   | 90.0                   | 135                    | 2.50               | 250                |

### PTC thermistor

| Function                    | Operating temperature | Rated resistance |        |        | Standard                           |
|-----------------------------|-----------------------|------------------|--------|--------|------------------------------------|
|                             |                       | 155 °C           | -20 °C | 140 °C |                                    |
|                             | T                     | $R_N$            | $R_N$  | $R_N$  |                                    |
|                             | -5 ... 5              |                  |        |        |                                    |
|                             | [°C]                  | [Ω]              | [Ω]    | [Ω]    |                                    |
| Sudden change in resistance | 150                   | 550              | 30.0   | 250    | DIN 44080<br>DIN VDE 0660 Part 303 |

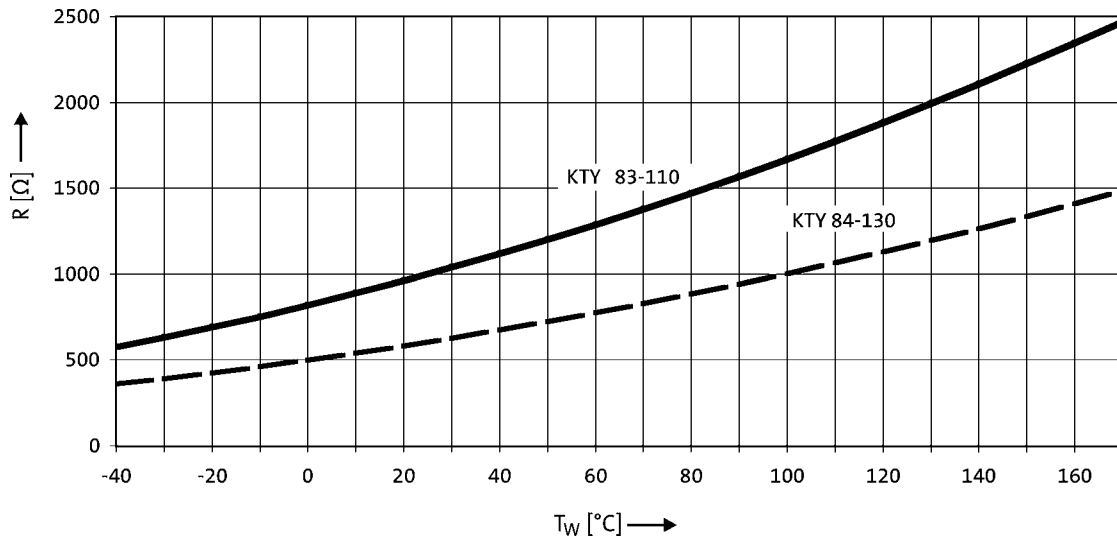


# Three-phase AC motors

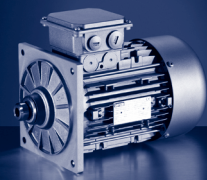
## Thermal sensor

### KTY continuous temperature sensor

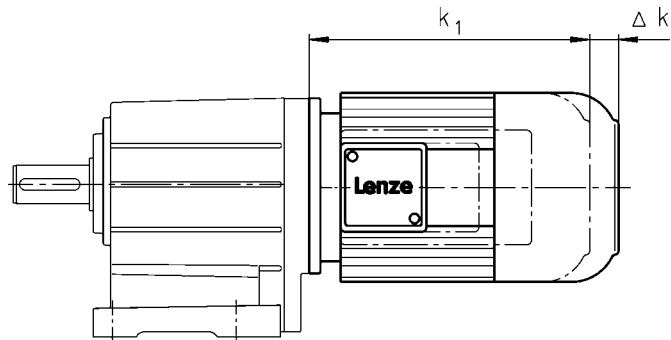
|           | Function                     | Rated resistance |              |              | Max. input current |              |
|-----------|------------------------------|------------------|--------------|--------------|--------------------|--------------|
|           |                              | 25 °C            | 150 °C       | 170 °C       | 25 °C              | 170 °C       |
|           |                              | $R_N$            | $R_N$        | $R_N$        | $I_{in,max}$       | $I_{in,max}$ |
|           |                              | [ $\Omega$ ]     | [ $\Omega$ ] | [ $\Omega$ ] | [A]                | [A]          |
| KTY83-110 | Continuous resistance change | 1000             | 2225         | 2471         | 0.010              | 0.002        |
| KTY84-130 | Continuous resistance change | 603              | 1334         | 1482         | 0.010              | 0.002        |



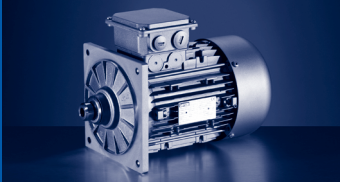
- ▶ If the detector is supplied with a measured current of 1 mA, the above relationship between the temperature and the resistance applies.



## Motors with integral fan



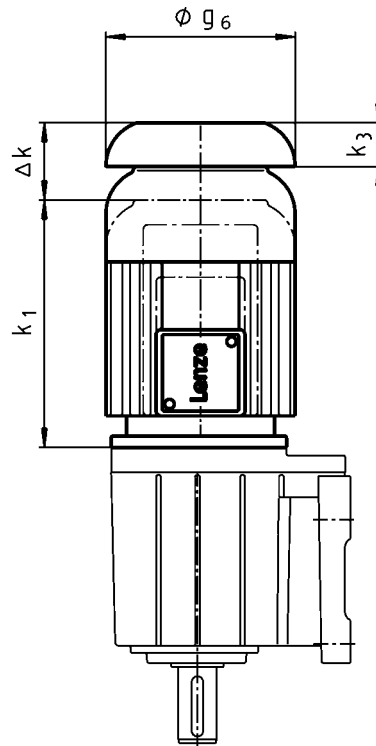
|                            | M□□MA XX | M□□MA BR | M□□MA BS<br>M□□MA BI<br>M□□MA BA | M□□MA RS<br>M□□MA IG<br>M□□MA AG |
|----------------------------|----------|----------|----------------------------------|----------------------------------|
|                            | Δ k      | Δ k      | Δ k                              | Δ k                              |
|                            | [mm]     | [mm]     | [mm]                             | [mm]                             |
| 063-32<br>063-42           | 0        | 40       | 103                              | 56                               |
| 071-32<br>071-42           |          | 52       | 96                               | 52                               |
| 080-32<br>080-42           |          | 73       | 111                              | 111                              |
| 090-32                     |          | 68       | 105                              | 87                               |
| 100-12<br>100-32           |          | 76       | 101                              | 81                               |
| 112-22                     |          | 90       | 120                              | 80                               |
| 132-12<br>132-22<br>132-32 |          | 110      | 125                              | 103                              |



# Three-phase AC motors

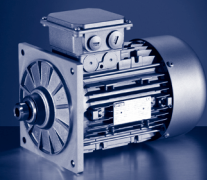
Dimensions [mm]

## Motors with integral fan and protection cover

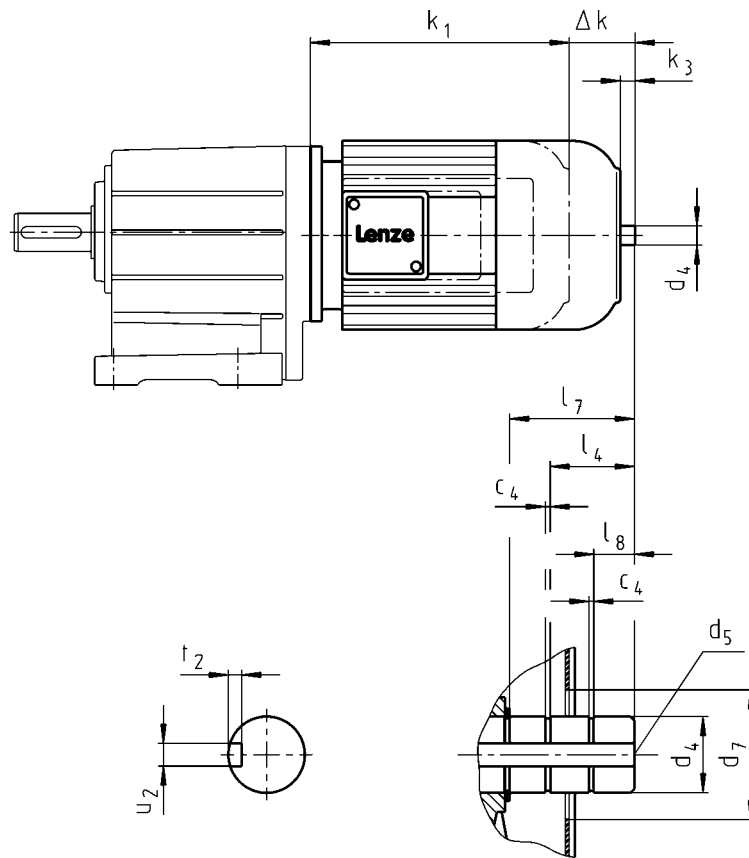


|                            | M□□MA XX | M□□MA BR | M□□MA BS<br>M□□MA BI<br>M□□MA BA | M□□MA RS<br>M□□MA IG<br>M□□MA AG |                |                |
|----------------------------|----------|----------|----------------------------------|----------------------------------|----------------|----------------|
|                            | Δ k      | Δ k      | Δ k                              | Δ k                              | g <sub>6</sub> | k <sub>3</sub> |
|                            | [mm]     | [mm]     | [mm]                             | [mm]                             | [mm]           | [mm]           |
| 063-32<br>063-42           | 26       | 66       | 129                              | 82                               | 123            | 11             |
| 071-32<br>071-42           |          | 78       | 122                              | 78                               | 138            | 12             |
| 080-32<br>080-42           |          | 99       | 137                              | 127                              | 156            | 16             |
| 090-32                     |          | 94       | 131                              | 113                              | 176            | 15             |
| 100-12<br>100-32           |          | 31       | 107                              | 132                              | 112            | 194            |
| 112-22                     | 121      |          | 151                              | 111                              | 218            | 18             |
| 132-12<br>132-22<br>132-32 | 141      |          | 156                              | 134                              | 257            | 20             |

8

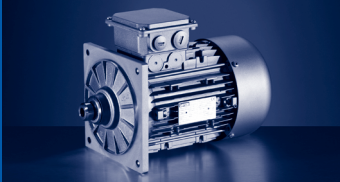


## Motors with integral fan and 2nd shaft end



|                            | M□□MA ZE<br>M□□MA BZ |                |                |                      |                      |                |                              |                |                |                |                |                |
|----------------------------|----------------------|----------------|----------------|----------------------|----------------------|----------------|------------------------------|----------------|----------------|----------------|----------------|----------------|
|                            | Δ k                  | k <sub>3</sub> | c <sub>4</sub> | d <sub>4</sub><br>h6 | d <sub>4</sub><br>j6 | d <sub>5</sub> | d <sub>7</sub> <sup>1)</sup> | l <sub>4</sub> | l <sub>7</sub> | l <sub>8</sub> | u <sub>2</sub> | t <sub>2</sub> |
|                            | [mm]                 | [mm]           | [mm]           | [mm]                 | [mm]                 | [mm]           | [mm]                         | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           |
| 071-32<br>071-42           | 47                   | 11             | 1.1            | 14                   |                      | M5             | 34                           |                | 19.0           | 3.0            | 5.0            | 3.0            |
| 080-32<br>080-42           | 68                   | 9              |                |                      |                      |                |                              |                |                | 4.5            |                |                |
| 090-32                     | 57                   | 5.0            |                |                      |                      |                |                              |                |                |                |                |                |
| 100-12<br>100-32           | 71                   | 19             | 1.3            | 20                   | M6                   |                | 17                           | 32.5           | 10.5           | 6.0            | 3.5            |                |
| 112-22                     | 84                   | 16             |                |                      |                      |                |                              |                | 7.0            |                |                |                |
| 132-12<br>132-22<br>132-32 | 101                  | 25             | 1.6            | 30                   | M10                  | 46             | 25                           | 42.0           | 8.5            | 8.0            | 4.0            |                |

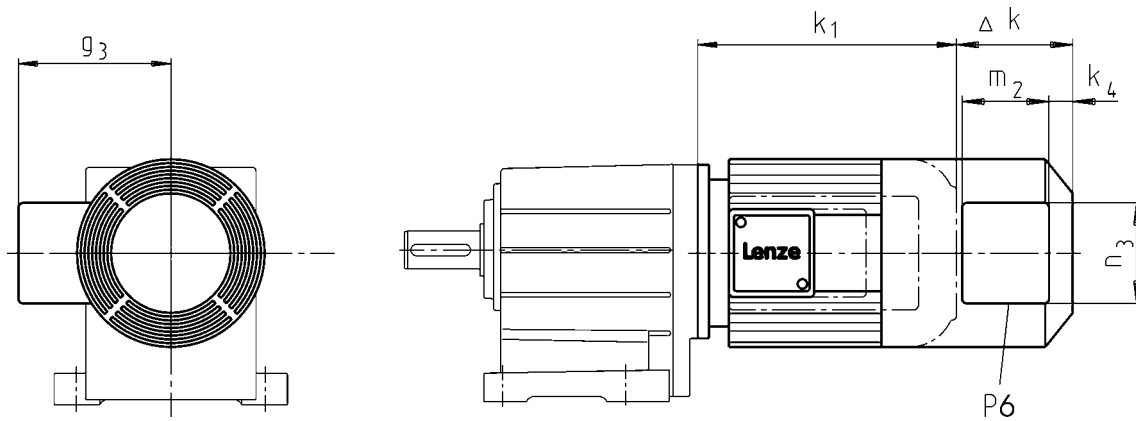
<sup>1)</sup> During operation, appropriate measures must be taken to make fan cover opening safe.



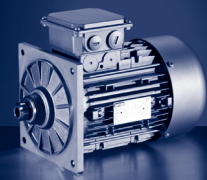
# Three-phase AC motors

## Dimensions [mm]

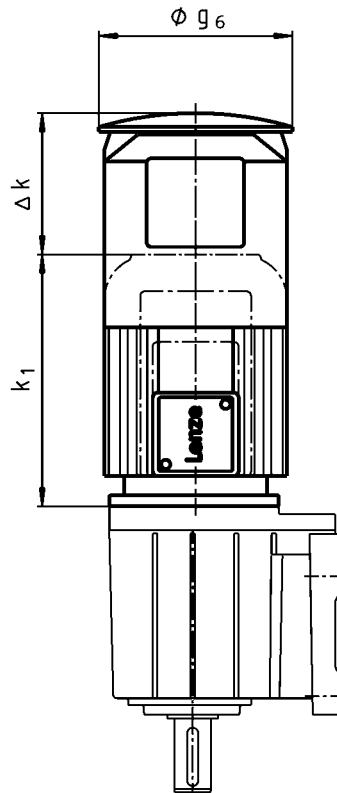
### Motors with blower



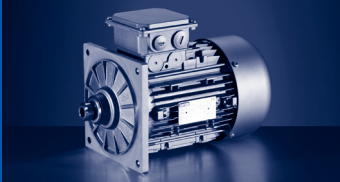
|                            | M□□MA<br>XX | M□□MA<br>BR | M□□MA<br>BS<br>M□□MA BI<br>M□□MA<br>BA | M□□MA<br>RS<br>M□□MA IG<br>M□□MA<br>AG |                |                |                |                |                |
|----------------------------|-------------|-------------|--|--|----------------|----------------|----------------|----------------|----------------|
|                            | Δ k         | Δ k         | Δ k                                    | Δ k                                    | k <sub>4</sub> | g <sub>3</sub> | m <sub>2</sub> | n <sub>3</sub> | P <sub>6</sub> |
|                            | [mm]        | [mm]        | [mm]                                   | [mm]                                   | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           |
| 063-32<br>063-42           | 128         | 170         | 170                                    | 128                                    | 12             | 115            | 95             | 105            | 1xM16x1.5      |
| 071-32<br>071-42           |             | 165         | 165                                    |  |                | 122            |                |                |                |
| 080-32<br>080-42           |             | 183         | 183                                    |  | 13             | 132            | 96             | 106            |                |
| 090-32                     |             | 181         | 181                                    |  |                | 141            |                |                |                |
| 100-12<br>100-32           | 109         | 170         | 170                                    | 109                                    | 22             | 150            | 95             | 105            |                |
| 112-22                     | 102         | 183         | 183                                    | 183                                    |                | 162            |                |                |                |
| 132-12<br>132-22<br>132-32 | 115         | 202         | 202                                    | 202                                    | 32             | 182            |                |                |                |



## Motors with blower and protection cover



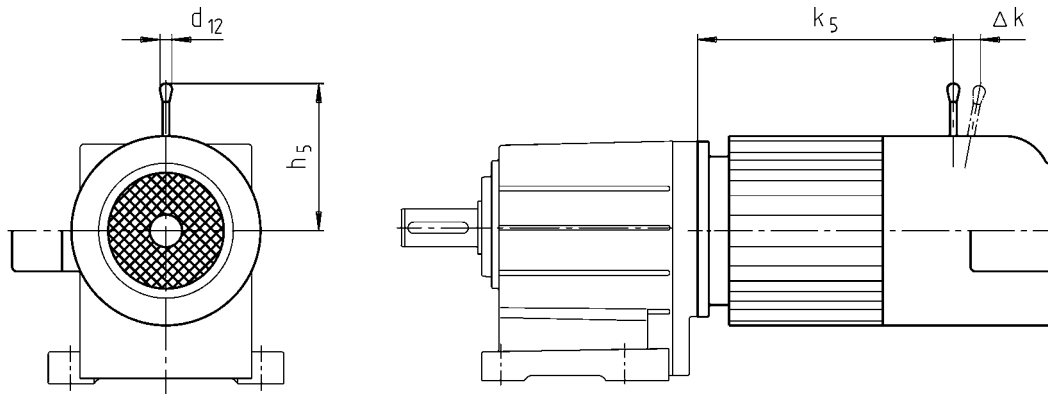
|                            | M□□MA XX | M□□MA BR<br>M□□MA BS<br>M□□MA BI | M□□MA RS<br>M□□MA IG<br>M□□MA AG |                |
|----------------------------|----------|----------------------------------|----------------------------------|----------------|
|                            | Δ k      | Δ k                              | Δ k                              | g <sub>6</sub> |
|                            | [mm]     | [mm]                             | [mm]                             | [mm]           |
| 063-32<br>063-42           | 169      | 209                              | 169                              | 133            |
| 071-32<br>071-42           | 165      | 202                              | 165                              | 150            |
| 080-32<br>080-42           | 168      | 224                              | 168                              | 170            |
| 090-32                     | 157      | 210                              | 157                              | 188            |
| 100-12<br>100-32           | 137      | 198                              | 137                              | 210            |
| 112-22                     | 135      | 216                              | 216                              | 249            |
| 132-12<br>132-22<br>132-32 | 140      | 226                              | 226                              | 300            |



## Three-phase AC motors

Dimensions [mm]

### Motors with manual brake release lever

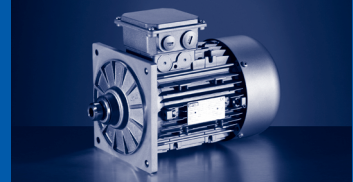


|                            | Brake    |               |                    |               |                  |
|----------------------------|----------|---------------|--------------------|---------------|------------------|
|                            |          | $k_5$<br>[mm] | $\Delta k$<br>[mm] | $h_5$<br>[mm] | $d_{12}$<br>[mm] |
| 063-32<br>063-42           | 06       | 173           | 29                 | 107           | 13.0             |
| 071-32<br>071-42           | 06<br>08 | 186<br>187    | 29<br>27           | 107<br>116    | 13.0             |
| 080-32<br>080-42           | 06<br>08 | 207<br>218    | 29<br>27           | 107<br>116    | 13.0             |
| 090-32                     | 08<br>10 | 245<br>256    | 27<br>28           | 116<br>132    | 13.0             |
| 100-12<br>100-32           | 10<br>12 | 294<br>296    | 28<br>37           | 132<br>161    | 13.0             |
| 112-22                     | 12<br>14 | 292<br>296    | 37<br>41           | 161<br>195    | 13.0<br>24.0     |
| 132-12<br>132-22<br>132-32 | 14<br>16 | 373<br>373    | 41<br>55           | 195<br>240    | 24.0<br>24.0     |

The following combinations with the manual release lever and motor connection in the same position are not possible:

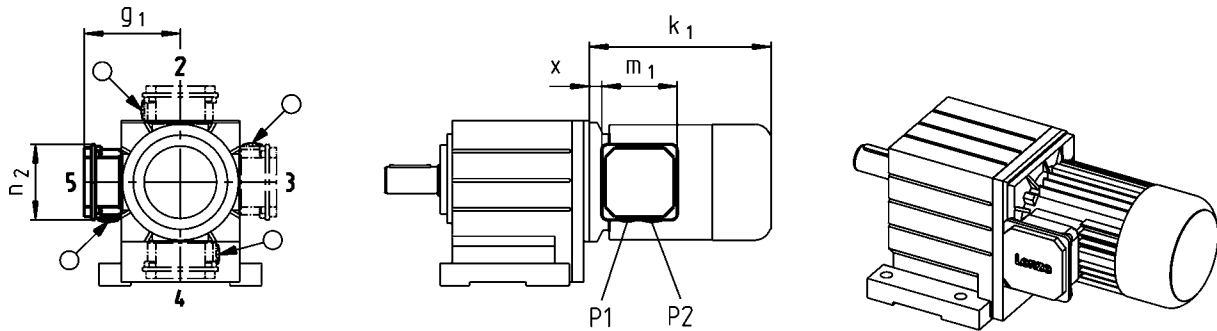
- ▶ HAN connector with connection in position 1
- ▶ motec inverter
- ▶ Terminal boxes for motor sizes 071, 080, 090 for brake and feedback (M□□MA BR/BS/BA/BI)





### Motor terminal box KK1

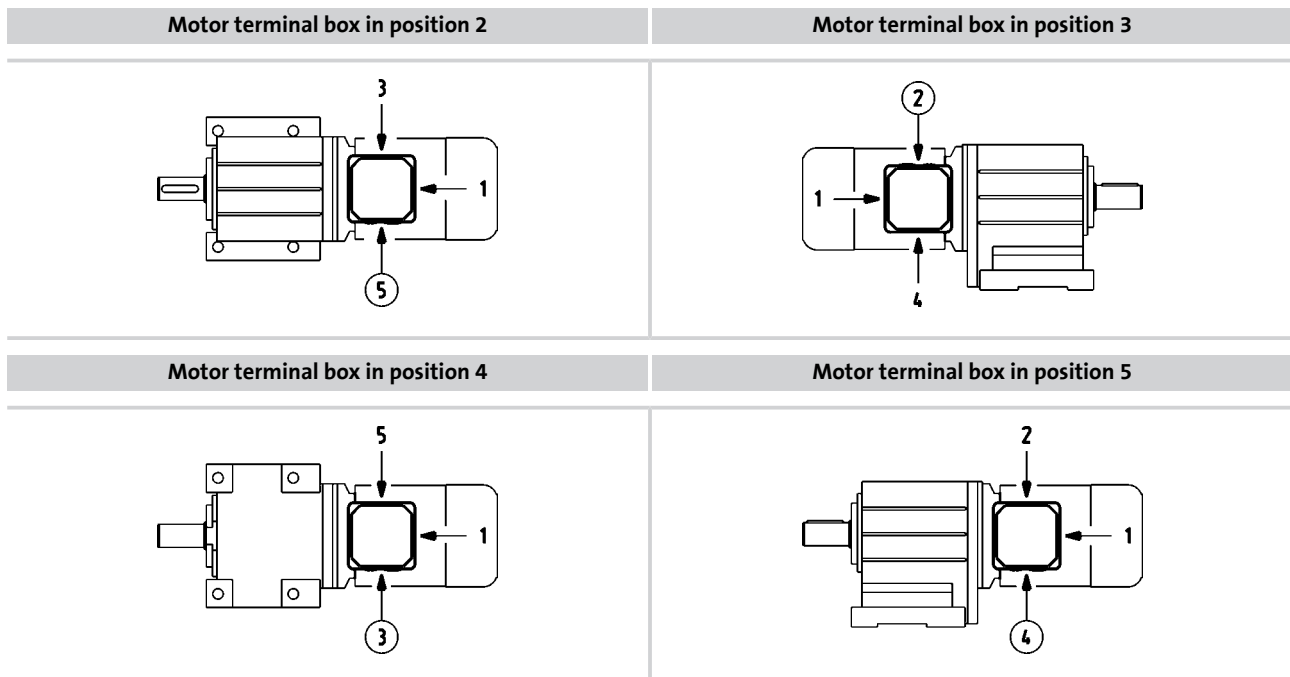
- ▶ For motors with motor terminal box KK1, the connector position can be selected in accordance with the terminal box position.
- ▶ If preferred positions are not specified in the order, the cable entry will be positioned as circled on the diagram below.

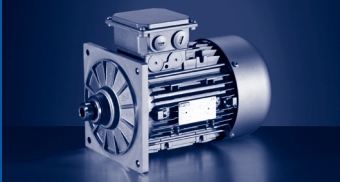


|            | x                | g <sub>1</sub>    | m <sub>1</sub>    | n <sub>2</sub>    | P <sub>1</sub>        | P <sub>2</sub> |
|------------|------------------|-------------------|-------------------|-------------------|-----------------------|----------------|
|            | [mm]             | [mm]              | [mm]              | [mm]              | [mm]                  | [mm]           |
| <b>063</b> | 21               | 100               | 75                | 75                | M16x1.5               | M20x1.5        |
|            | 8 <sup>1)</sup>  | 114 <sup>1)</sup> |                   |                   |                       |                |
| <b>071</b> | 24               | 109               | 101 <sup>1)</sup> | 101 <sup>1)</sup> | M20x1.5 <sup>1)</sup> | M20x1.5        |
|            | 11 <sup>1)</sup> | 123 <sup>1)</sup> |                   |                   |                       |                |
| <b>080</b> | 14               | 141               | 115               | 115               | M20x1.5               | M25x1.5        |
| <b>090</b> | 19               | 146               |                   |                   |                       |                |
| <b>100</b> | 20               | 157               |                   |                   |                       |                |
| <b>112</b> | 22               | 167               |                   |                   |                       |                |
| <b>132</b> | 33               | 195               |                   |                   |                       |                |

<sup>1)</sup> UL/CSA approval: cURus

### Position of cable entry

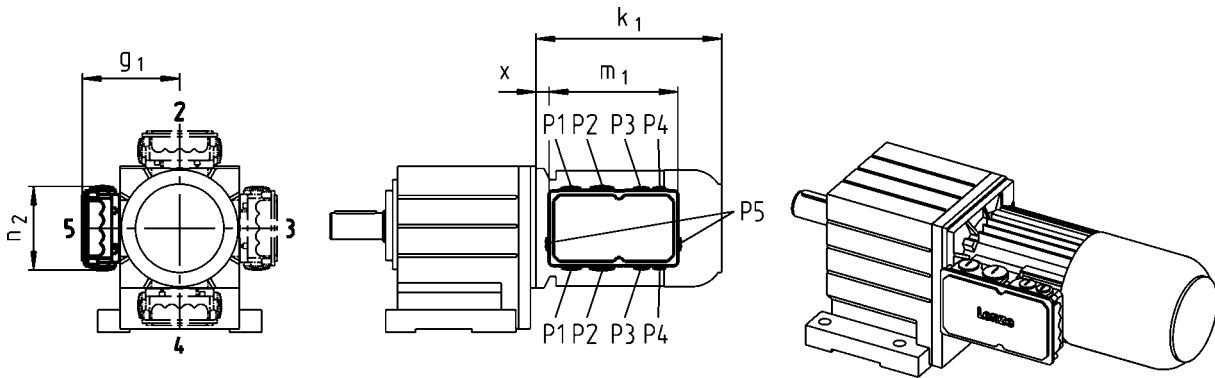




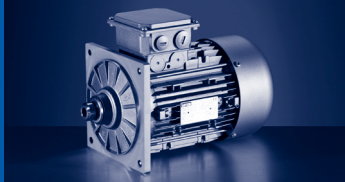
# Three-phase AC motors

## Dimensions [mm]

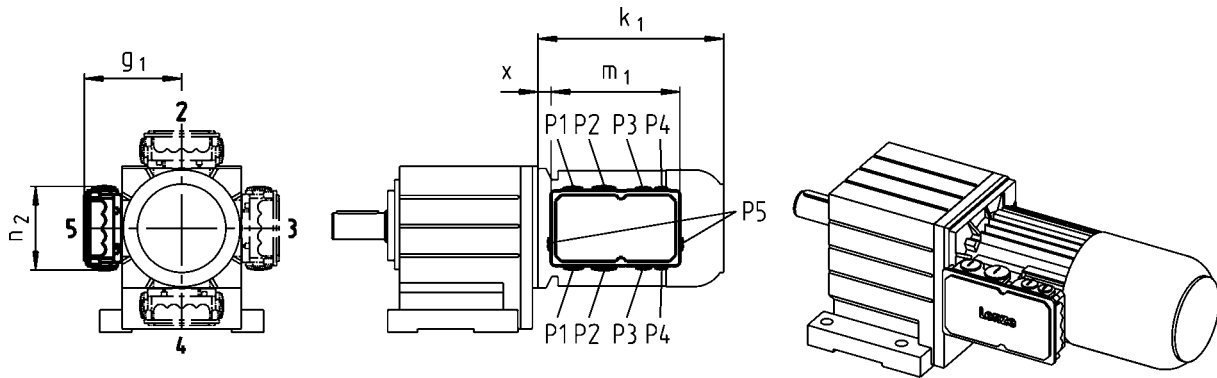
### Motor terminal box KK2



|            | x    | g <sub>1</sub> | m <sub>1</sub> | n <sub>2</sub> | P <sub>1</sub> | P <sub>2</sub> |
|------------|------|----------------|----------------|----------------|----------------|----------------|
|            | [mm] | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           |
| <b>063</b> | 13   | 107            | 136            | 103            | M16x1.5        | M20x1.5        |
| <b>071</b> | 15   | 118            |                |                |                |                |
| <b>080</b> | 17   | 132            |                |                |                |                |
| <b>090</b> | 22   | 137            | 152            | 121            | M20x1.5        | M25x1.5        |
| <b>100</b> | 23   | 147            |                |                |                |                |
| <b>112</b> | 25   | 158            |                |                |                |                |

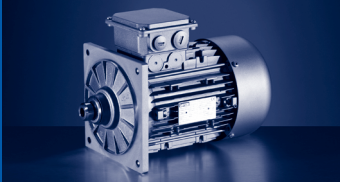


## Motor terminal box KK3



|            | x    | g <sub>1</sub> | m <sub>1</sub> | n <sub>2</sub> | P <sub>1</sub> | P <sub>2</sub> | P <sub>3</sub> | P <sub>4</sub> |
|------------|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|            | [mm] | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           |
| <b>063</b> | 2    | 124            | 195            | 125            | M25x1.5        | M32x1.5        | M20x1.5        | M20x1.5        |
| <b>071</b> | 5    | 133            |                |                |                |                |                |                |
| <b>080</b> | 15   | 142            |                |                |                |                |                |                |
| <b>090</b> | 20   | 147            |                |                |                |                |                |                |
| <b>100</b> | 21   | 158            |                |                |                |                |                |                |
| <b>112</b> | 23   | 168            |                |                |                |                |                |                |
| <b>132</b> | 38   | 187            |                |                |                |                |                |                |

<sup>1)</sup> Cable entry only possible at one position.  
 Terminal box position 2: cable entry at position 5.  
 Terminal box position 3: cable entry at position 2.  
 Terminal box position 4: cable entry at position 3.  
 Terminal box position 5: cable entry at position 4.

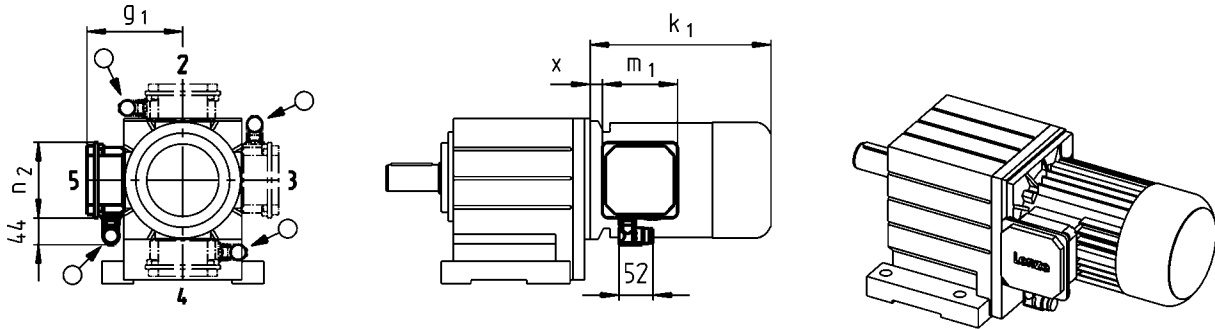


# Three-phase AC motors

## Dimensions [mm]

### Motor terminal box KK1 with ICN connector

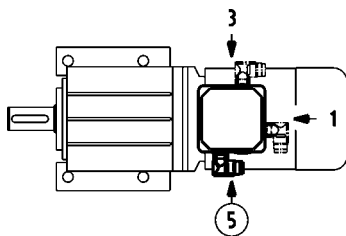
- ▶ For motors with connectors, the connector position can be selected in accordance with the terminal box position.
- ▶ If preferred positions are not specified in the order, the connector will be positioned as circled on the diagram below.



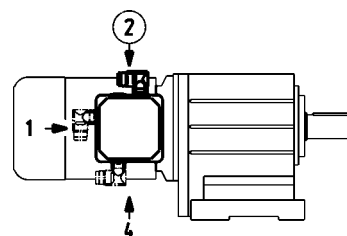
|     | x<br>[mm] | g <sub>1</sub><br>[mm] | m <sub>1</sub><br>[mm] | n <sub>2</sub><br>[mm] |
|-----|-----------|------------------------|------------------------|------------------------|
| 063 | 8         | 114                    | 101                    | 101                    |
| 071 | 11        | 123                    |                        |                        |
| 080 | 14        | 141                    |                        |                        |
| 090 | 19        | 146                    | 115                    | 115                    |
| 100 | 20        | 157                    |                        |                        |

### Position of connector

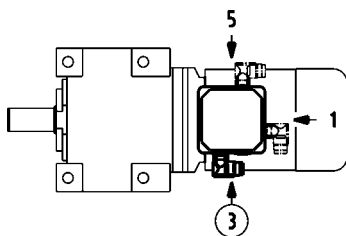
Motor terminal box with ICN connector in position 2



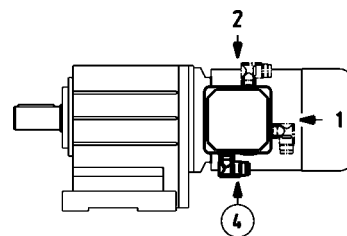
Motor terminal box with ICN connector in position 3

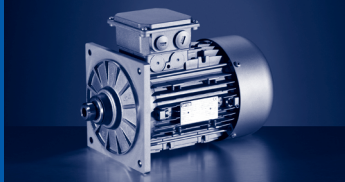


Motor terminal box with ICN connector in position 4



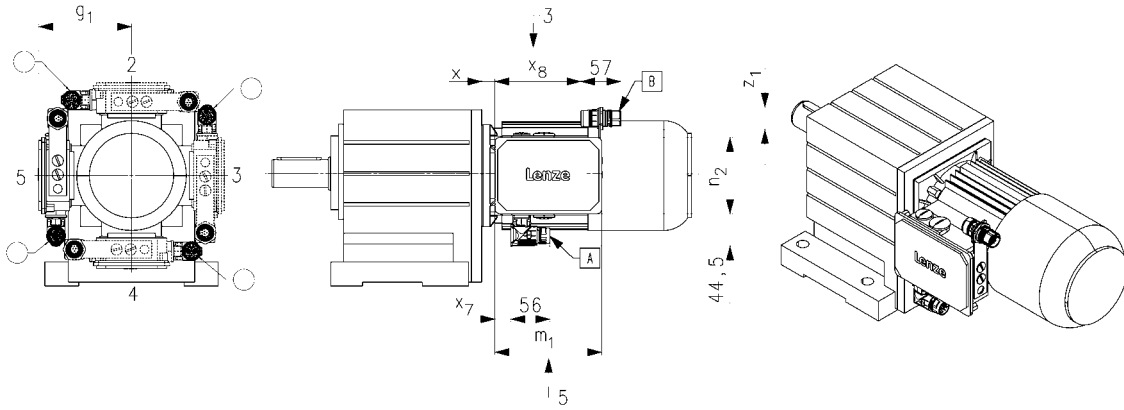
Motor terminal box with ICN connector in position 5





## Motor terminal box KK2 / KK3 with ICN connector

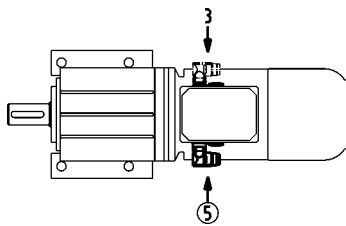
- ▶ For motors with connectors, the connector position can be selected in accordance with the terminal box position.
- ▶ If preferred positions are not specified in the order, the connector will be positioned as circled on the diagram below.



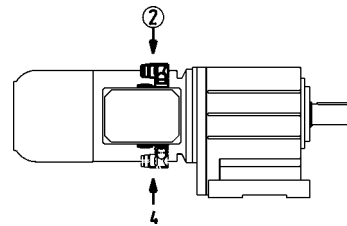
|            | x    | g <sub>1</sub> | m <sub>1</sub> | n <sub>2</sub> | x <sub>7</sub> | x <sub>8</sub> | z <sub>1, max</sub> |
|------------|------|----------------|----------------|----------------|----------------|----------------|---------------------|
|            | [mm] | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           | [mm]                |
| <b>063</b> | 13   | 107            | 136            | 103            | 16             | 109            | 43                  |
| <b>071</b> | 15   | 118            |                |                |                |                |                     |
| <b>080</b> | 17   | 132            |                |                |                |                |                     |
| <b>090</b> | 22   | 137            | 152            | 121            | 23             | 125            | 41                  |
| <b>100</b> | 23   | 147            |                |                |                |                |                     |

## Position of connector

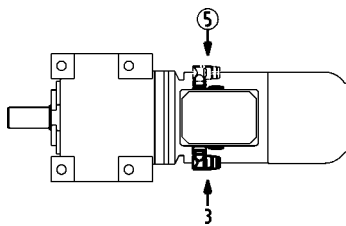
Motor terminal box with ICN connector in position 2



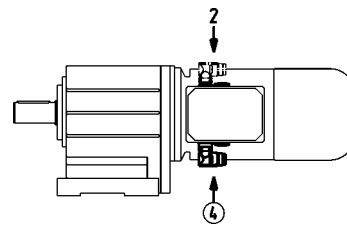
Motor terminal box with ICN connector in position 3

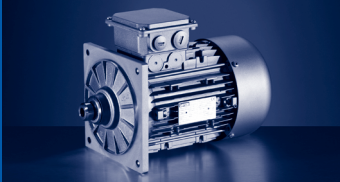


Motor terminal box with ICN connector in position 4



Motor terminal box with ICN connector in position 5

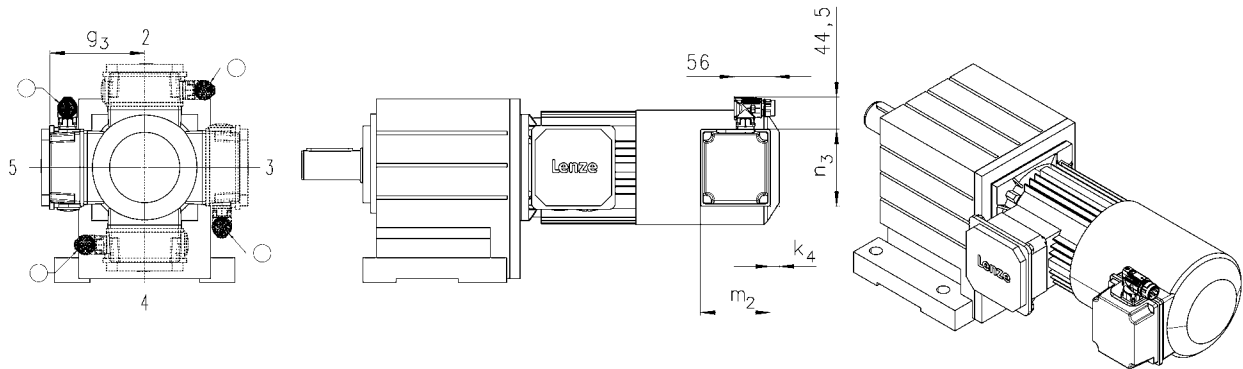




# Three-phase AC motors

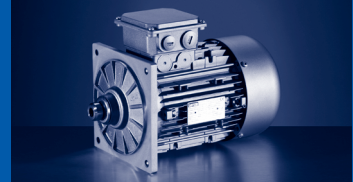
## Dimensions [mm]

### ICN connector for blower



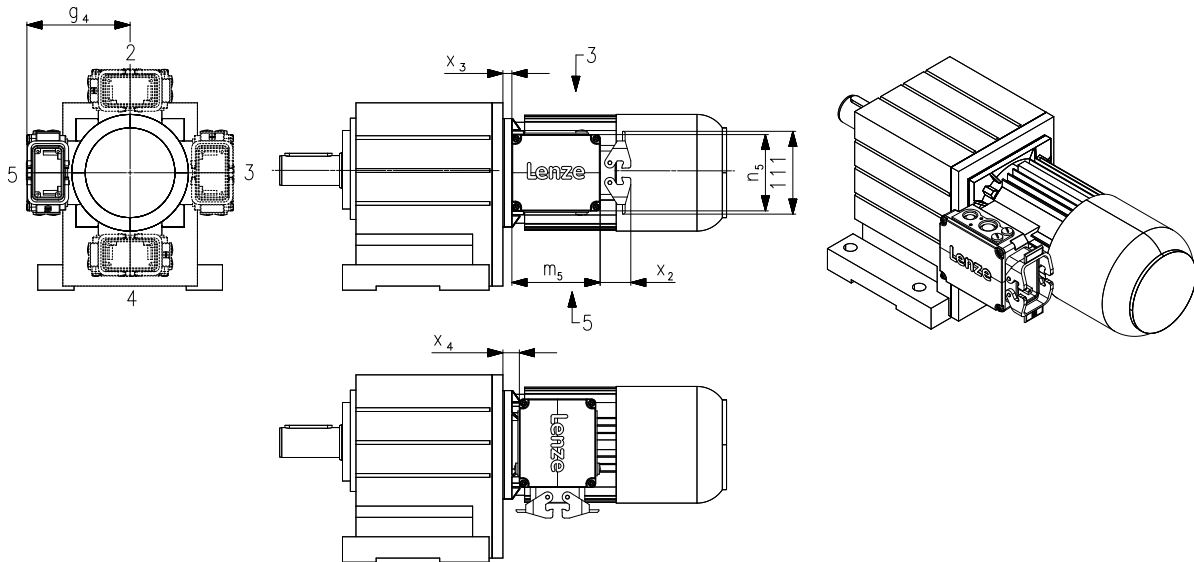
|            | $k_4$<br>[mm] | $g_3$<br>[mm] | $m_2$<br>[mm] | $n_3$<br>[mm] |
|------------|---------------|---------------|---------------|---------------|
| <b>063</b> | 12            | 115           | 95            | 105           |
| <b>071</b> |               | 122           |               |               |
| <b>080</b> | 13            | 132           | 96            | 106           |
| <b>090</b> |               | 141           |               |               |
| <b>100</b> | 22            | 150           | 95            | 105           |
| <b>112</b> |               | 162           |               |               |
| <b>132</b> |               | 182           |               |               |

- ▶ In addition, the cover of the blower terminal box (including connectors) can be rotated progressively through 90° if necessary.

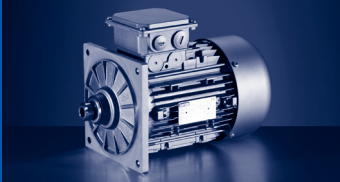


## Motor terminal box with HAN-10E / HAN-Modular connector

- ▶ For motors with connectors, the connector position can be selected in accordance with the terminal box position.
- ▶ Unless the connector position is specified, it will be supplied in position 1.



|            | $g_4$ | $m_5$ | $n_5$ | $x_2$ | $x_3$ | $x_4$ |
|------------|-------|-------|-------|-------|-------|-------|
|            | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  | [mm]  |
| <b>063</b> | 120   | 118   | 102   | 41.0  | 5.00  | 6.00  |
| <b>071</b> | 129   |       |       |       | 7.00  | 8.00  |
| <b>080</b> | 138   |       |       |       | 11.0  | 19.0  |
| <b>090</b> | 143   |       |       |       | 15.0  | 23.0  |
| <b>100</b> | 154   |       |       |       | 16.0  | 24.0  |
| <b>112</b> | 164   |       |       |       | 13.5  | 21.5  |
| <b>132</b> | 233   | 120   | 180   | 47.0  | 34.5  | 4.50  |

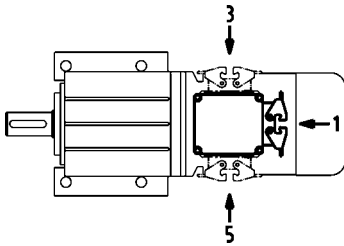


# Three-phase AC motors

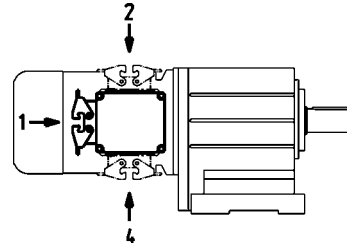
Dimensions [mm]

## Position of connector

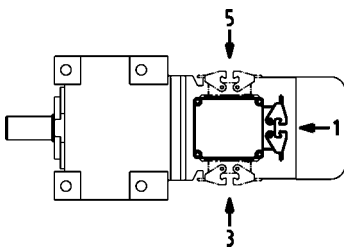
Motor terminal box with HAN connector in position 2



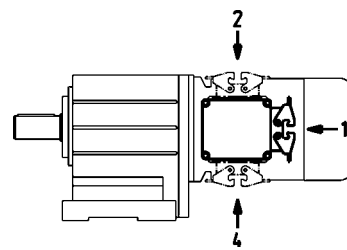
Motor terminal box with HAN connector in position 3



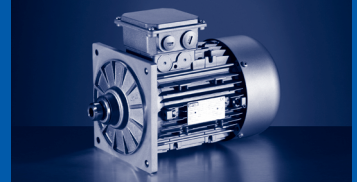
Motor terminal box with HAN connector in position 4



Motor terminal box with HAN connector in position 5









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